

Contract No.: 282-98-0021
MPR Reference No.: 8687-300

2000 Health Care Survey of DoD Beneficiaries:

Adult Technical Manual

February 2002

Final

Submitted to:

TRICARE Management Activity
5111 Leesburg Pike, Suite 810
Falls Church, VA 22041
(703) 681-4263

Task Order Officer:

LTC Thomas V. Williams, Ph.D.

Submitted by:

Mathematica Policy Research, Inc.
600 Maryland Ave., SW, Suite 550
Washington, DC 20024-2512
(202) 484-9220

Project Director:

Eric Schone, Ph.D.

PAGE IS INTENTIONALLY LEFT BLANK TO ALLOW FOR DOUBLE-SIDED COPYING

Contents

Chapter	Page
1	Introduction..... 1
A.	Overview of the HCSDB2
1.	Sample Design2
2.	2000 Adult HCSDB3
3.	Survey Response.....3
4.	Database Development4
5.	Reports4
B.	Organization of this Manual4
2	Survey of Adults5
A.	Survey Operations Activities5
B.	Address Update Activities Prior to and During Survey Administration5
C.	Letter Processing Procedures.....8
D.	Survey Administration Timeline8
E.	Processing and Classification of Incoming Surveys.....9
3	Database 13
A.	Database Design 13
1.	Data Sources 13
2.	Variable Naming Conventions31
3.	Missing Value Conventions.....31
B.	Cleaning and Editing.....34
1.	Scan Review.....34
2.	Additional NRC Editing and Coding34
3.	Duplicate or Multiple Surveys.....34
4.	Removal of Sensitive or Confidential Information34
5.	Initial Frequencies35
6.	Data Cleaning and Recoding of Variables35
7.	Quality Assurance.....36
C.	Record Selection 37
D.	Constructed Variables..... 39
1.	Demographic Variables..... 39
2.	TRICARE Prime Enrollment and Insurance Coverage44
3.	Satisfaction Measures.....47
4.	Access to Care.....48
5.	Health Status49
6.	Preventive Care52
7.	Utilization.....55

E.	Weighting Procedures	55
1.	Constructing the Sampling Weight.....	55
2.	Adjustment for Total Nonresponse.....	56
3.	Weighting Class Adjustment.....	56
4.	Poststratification for Quarters I and II.....	58
5.	Calculation of Combined Annual Weights.....	60
6.	Calculation of Jackknife Replicates.....	61
4	Analysis	63
A.	Response Rates	63
1.	Definition of Response Rates.....	63
2.	Reporting	65
B.	Variance Estimation.....	66
1.	Taylor Series Linearization.....	67
2.	Jackknife Replication	67
C.	Significance Tests.....	68
D.	Demographic Adjustments.....	69
E.	Dependent and Independent Variables	71
F.	Reports	71
1.	2000 TRICARE Consumer Reports.....	71
2.	TRICARE Consumer Watch	73
3.	National Executive Summary Report.....	74
	References	77

Appendices

Appendix	Page
A	Annotated Questionnaires – Quarters I-IV A-1
B	Plan for Data Quality – Coding Scheme and Coding Tables B-1
C	Mapping the Military Treatment Facility (MTF) to the Catchment Area and Region C-1
D	Response Rate Tables D-1
E	Technical Description of the 2000 TRICARE Consumer Reports E-1
F	SAS Code for File Development F-1
	F-1 Create Post-Stratification Variables F-3
	F-2 Implement Coding Scheme and Coding Tables F-23
	F-3 Create Status Flag for Record Selection F-45
	F-4 Constructed Variables for Analysis F-47
	F-5 Merge Constructed Variables onto Data File F-54
	F-6 Response Rate Calculations F-61
	F-7 Development of Weights F-68
	F-8 Final Merge F-88
G	SAS Code for Statistical and Web Specifications for 2000 TRICARE Consumer Reports G-1
	G-1 Constructed Variables for 2000 TRICARE Consumer Reports G-3
	G-2 Calculate CAHPS Adjusted Scores G-10
	G-3 Convert CAHPS Scores into Web Layout G-23
	G-4 Calculate 2000 CAHPS Benchmark Data for 2000 HCSDB G-28
	G-5 Calculate Preventive Care Composite Scores G-42
	G-6 Generate Web Layout for 2000 TRICARE Consumer Reports G-55
	G-7 Combine Scores Databases for Quarterly and Benchmark Data G-60
	G-8 Calculate CAHPS CONUS Scores and Conduct Significance Test G-63
	G-9 Generate MPR and CAHPS Total Score G-74
	G-10 Generate HTML File for the 2000 TRICARE Consumer Reports G-81
	G-11 Quality Assurance for Consumer Reports G-109
H	SAS Code for TRICARE Consumer Watch H-1
	H-1 Generate Composite Scores for Chronic Conditions H-3
	H-2 Calculate Scores and Produce Graphs for Each Region H-16
	H-3 Calculate Scores and Produce Grades for Each Service H-26
I	SUDAAN Code for Variance Estimation I-1

PAGE IS INTENTIONALLY LEFT BLANK TO ALLOW FOR DOUBLE-SIDED COPYING

Tables

Table	Page
2.1 Frequency of Address Source by Beneficiary Category for 2001	7
2.2 FREQUENCY OF ADDRESS SOURCES FOR RETURNED SURVEYS - 2001.....	8
2.3 MAILING TIMELINE For 2001	9
2.4 Frequency (N) and Percent Distribution of Final Disposition of Survey Sample by Beneficiary Group For 2001.....	11
2.5 RETURNED SURVEYS BY SURVEY TYPE For QuarterS I-IV	12
3.1 Variables in the 2000 Adult HCSDB Data File.....	15
3.2 Naming Conventions for 2000 HCSDB Variables – Quarters I-IV	32
3.3 Coding of Missing Data and “Not Applicable” Responses	33
3.4 FLAG_FIN Variable FOR 2000 HCSDB.....	37
3.5 TRICARE Standards for Access.....	48
3.6 Preventive Care Standards.....	53
4.1 Response Rates Overall, by Enrollment Group, and by Beneficiary Group For Quarters I, II, III AND IV combined.....	66

•
•
•
•
•
•

PAGE IS INTENTIONALLY LEFT BLANK TO ALLOW FOR DOUBLE-SIDED COPYING

Chapter

1

Introduction

The 2000 Adult Health Care Survey of Department of Defense Beneficiaries (HCSDB) is the primary tool with which the TRICARE Management Activity (TMA) of the Assistant Secretary of Defense (Health Affairs) monitors the opinions and experiences of military health system (MHS) beneficiaries. The HCSDB has been conducted annually since 1995. The 2000 Survey is the first HCSDB to be fielded quarterly. Specifically, the HCSDB is designed to answer the following questions:

- ✍ How *satisfied* are DoD beneficiaries with their health care and their health plan?
- ✍ How does overall satisfaction with military treatment facilities (MTFs) compare with satisfaction with civilian treatment facilities (CTFs)?
- ✍ Does *access* to military and civilian facilities meet TRICARE standards?
- ✍ Is beneficiaries' use of preventive health care services in line with national goals, such as those outlined in *Healthy People 2010*?
- ✍ Has beneficiaries' use of MHS services changed over time?
- ✍ What aspects of MHS care contribute most to beneficiary satisfaction with their health care experiences? With which aspects are beneficiaries least satisfied?
- ✍ What are the demographic characteristics of MHS beneficiaries?

The HCSDB is a quarterly mail survey of a representative sample of MHS beneficiaries. It is sponsored by the TRICARE Management Activity in the Office of the Assistant Secretary of Defense (Health Affairs) [OASD(HA)] under authority of the National Defense Authorization Act for Fiscal Year 1993 (P.L. 102-484). The DoD Defense Manpower Data Center (DMDC) prepares the sampling frame, which consists of selected variables for each MHS beneficiary in the Defense Enrollment Eligibility Reporting System (DEERS) database on a specified reference date. DEERS includes everyone who is eligible for a MHS benefit (i.e., everyone in the Uniformed Services--Army, Air Force, Navy, Marine Corps, Coast Guard, the Commissioned Corps of the Public Health Service, National Oceanic and Atmospheric Administration, Guard/Reserve personnel who are activated for more than 30 days -- and other special categories of people who qualify for benefits). DEERS includes those on active duty, those retired from military careers, immediate family members of people in the previous two categories, and surviving family members of people in these categories.

Each quarter, Mathematica Policy Research, Inc. (MPR, Washington, D.C.) prepared a sample of 45,000 adult beneficiaries. Under subcontract to United Healthcare, National Research Corporation (NRC) fielded the survey each quarter. MPR analyzed the survey data, reported on the results, and prepared this document, the "2000 Health Survey of DoD Beneficiaries: Adult Technical Manual", and the 2000 National Executive Summary Report (NESR) under task order 14, under Contract Number 282-98-0021.

This manual is designed to be used as a reference by analysts in OASD(HA) as they interpret the survey findings and prepare briefings. The manual provides detailed documentation on the following: naming conventions for variables, editing procedures, selection of records, computation

of response rates, recoding of variables, computation of weights, variance estimation, and construction of tables and charts for the reports. The manual enables an analyst to link each cell in each table (or chart) in the reports to the associated question in the Form A questionnaire and/or to the variable in the survey database. The manual also enables an analyst to follow, and replicate if desired, the processing of the raw survey data through each step in the production of the final database.

A. OVERVIEW OF THE HCSDB

1. Sample Design

The 2000 adult sample design is based on three sample stratifications--enrollment type, beneficiary type, and geographic area. Enrollment type is defined by enrollment in TRICARE Prime with a military primary care manager (PCM), a civilian PCM, or not enrolled. The effect of this stratification is to allocate a greater proportion of the HCSDB sample to those enrolled in Prime and a smaller proportion to those not enrolled in Prime. This shift in the allocation of the sample was prompted by TMA's policy interest in Prime enrollees.

Beneficiary type is defined as active duty, active duty family members, retirees and family members under age 65 and non-active duty beneficiaries and their family members age 65 and over. Compared with previous surveys, this stratification causes a larger proportion of the sample to be allocated to active duty personnel and their family members, and a smaller proportion of the sample to be allocated to retirees. The exception to this general rule is that retirees in the six Medicare Subvention Demonstration sites are oversampled in the 2000 HCSDB to provide data for the evaluation of the demonstration by TMA and the Health Care Financing Administration (HCFA).

The geographic stratification depends on enrollment type. Those enrolled in Prime who have a military PCM typically receive much of their health care from a military treatment facility (MTF), that is a military hospital or clinic. The geographic stratification for such beneficiaries is determined by the MTF that bears the financial responsibility for the beneficiary's health care. This stratification does not depend on the location of the beneficiary's residence, although most such beneficiaries live within the catchment area of the responsible MTF.

Those enrolled in Prime with a civilian PCM typically receive much of their health care from a TRICARE contractor. The geographic stratification for these beneficiaries is the catchment area in which they live.

Those not enrolled in Prime typically receive much of their care through TRICARE Extra/Standard (CHAMPUS) or through a non-MHS health plan. The service area they live in determines the geographic stratification. Conceptually, the service area is the health care market area in which the beneficiary resides. Operationally, the service area is the group of catchment areas in the metropolitan area the beneficiary lives in. For beneficiaries who do not live in a metropolitan area, the service area is the same as the catchment area they live in.

Relative to previous surveys, more military clinics, as opposed to military hospitals, were included in the list of geographic areas. This means that a larger proportion of the 2000 sample is allocated to beneficiaries who receive much of their health care from a military clinic, and a smaller proportion is allocated to those receiving much of their care from a military hospital.

A final key characteristic of the 2000 adult sample design is the oversampling of beneficiaries over the age of 65 in the six sites of the Medicare Subvention Demonstration. The demonstration, sponsored jointly by TMA and the HCFA, is designed to field test a program in which military retirees age 65 and over are enrolled in TRICARE Prime rather than in the Medicare trust fund.

The demonstration is now being initiated in 10 MTFs in seven geographic areas in the continental United States.

2. 2000 Adult HCSDB

The HCSDB questionnaire was substantially revised from last year for the 2000 Adult survey. The 2000 Adult questionnaire for all four quarters is reproduced in Appendix A. The major changes were:

- ✍ The 2000 HCSDB is fielded each quarter of 2001 to a representative sample of MHS beneficiaries.
- ✍ The 2000 HCSDB consists of an unchanging core questionnaire with different supplements.

The core adult questionnaire includes the following topics:

- ✍ Use of health care
- ✍ Use of preventive health care
- ✍ Type of health plan covering the beneficiary
- ✍ Satisfaction with health plan
- ✍ Satisfaction with health care
- ✍ Access to health care
- ✍ Demographic characteristics

The supplements contain questions on the following health care topics:

- ✍ Chronic conditions (Quarter I)
- ✍ Mental health services (Quarter II)
- ✍ Health plan choices for seniors (Quarter II)
- ✍ TRICARE claims handling (Quarter III)
- ✍ Health status (Quarter IV)

3. Survey Response

Each quarter, 45,000 beneficiaries were sampled and sent a 2000 Adult HCSDB questionnaire. In Quarter I, of the 45,000 beneficiaries sampled, 13,843 adult MHS beneficiaries completed and returned a 2000 Adult HCSDB questionnaire, yielding a response rate of 31%. Quarter II generated a 33% response rate, with 14,629 adult beneficiaries completing and returning the Adult HCSDB questionnaire. In Quarters III and IV, 14,902 and 14,888 adult beneficiaries completed and returned questionnaires, respectively, yielding a response rate of 33.3 % each quarter.

These response rates do not include late arriving responses from the surveys fielded in the first three quarters. These response rates are based on the number of completed surveys returned to the survey vendor at the end of the fielding period. The annual combined data set includes the surveys returned after the end of the fielding period. The quarterly response rates were subsequently recalculated. The revised response rate for Quarter I is 33.7%. For Quarter II, the final response rate is 36.1%. The response rates for Quarters III and IV are 33.3 and 34.5%, respectively.

4. Database Development

MPR edits the data, selects records for inclusion in the final database, and constructs variables to be used in reports. To ensure that the survey data is representative of the DEERS population, MPR develops weights to take account of the initial sampling, the sampled individuals who chose not to respond to the survey, and post stratification to update the beneficiary's key information.

5. Reports

MPR analyzed the data and produced several reports explaining the findings on topics such as satisfaction, access to care, health care use, and use of preventive services. These reports will be available on the TRICARE website at <http://www.TRICARE.USD.mil>:

- ✍ 2000 TRICARE Consumer Reports
- ✍ 2000 TRICARE Consumer Watch
- ✍ National Executive Summary Report

B. ORGANIZATION OF THIS MANUAL

Chapter 2 presents the procedures used in fielding the survey. Chapter 3 explains how the database was developed. It covers naming conventions, editing procedures, record selection criteria, descriptions of all variable types, definitions of each constructed variable, the development of satisfaction and health status scales, and weighting procedures. Chapter 4 describes how the database was analyzed. This includes rules for developing response rates, the development of table and chart specifications for the National Executive Summary Report, an explanation of the dependent variables and independent variables, and the methodology for estimating the variance of estimates. The manual concludes with a series of technical appendices:

- ✍ Appendix A: Annotated questionnaires – survey questionnaire annotated with database variable names
- ✍ Appendix B: Plan for Data Quality – Coding Scheme – Quarters I-IV
- ✍ Appendix C: A table mapping MTFs to the catchment area and region. The table also indicates the type of facility, such as teaching hospital or clinic, and the service affiliation of the MTF.
- ✍ Appendix D: Response rate tables for selected domains
- ✍ Appendix E: Technical Description of the 2000 TRICARE Consumer Reports
- ✍ Appendix F: SAS Code for File Development
- ✍ Appendix G: SAS Code for Statistical and Web Specifications for the 2000 TRICARE Consumer Reports
- ✍ Appendix H: SAS Code for 2000 TRICARE Consumer Watch
- ✍ Appendix I: The SUDAAN code for calculating variance estimates

Chapter
2

Survey of Adults

This chapter presents information on the survey administration cycle for the 2000 Health Care Survey of DoD Beneficiaries (HCSDB). Numbers in this chapter do not include surveys received after the closing of the fielding period.

A. SURVEY OPERATIONS ACTIVITIES

The operational support for mailing the survey involves four mailings to beneficiaries during the fielding period. Targeted mailings and remailings have been integrated into the mailing administration in order to increase response rates. The mailings are as follows: notification mailing, first survey mailing, reminder/thank you mailing, and second survey mailing. The notification letter is a short letter of explanation encouraging beneficiaries to participate. The first and second surveys are mailed with a cover letter of explanation. The reminder/thank you post card is mailed between the first and second surveys reminding beneficiaries to complete the survey and thanking those beneficiaries who have completed the survey. The same sequence of mailings is performed each quarter.

B. ADDRESS UPDATE ACTIVITIES PRIOR TO AND DURING SURVEY ADMINISTRATION

Each quarter Mathematica Policy Research, Inc. (MPR) delivers a sample file containing a sample of eligible DoD beneficiaries. The sample and 63 additional variables are constructed from the Defense Enrollment Eligibility Reporting System (DEERS). National Research Corporation (NRC) conducts various address verification activities prior to the survey administration. Similar procedures are conducted each quarter.

Each quarter, MPR submits a sample file containing 45,000 records of DoD beneficiaries and 63 variables constructed from the Defense Enrollment Eligibility Reporting System (DEERS). The file is sent out for NCOA address checking. National Research Corporation (NRC) is sent a copy of all sample records to an outside vendor to receive address hygiene services and to be interfaced with the National Change of Address (NCOA) database to obtain updated address information. The NCOA vendor returns the updated address file and this information, along with the sample file from MPR, and are loaded into NRC's proprietary software system known as QualPro. QualPro is NRC's "quality process" software and business discipline that standardizes and automates the entire survey process from data quality checks to the scanning of returned surveys.

The Configuration Manager module in QualPro contains the layout for all mail items (e.g., the survey, cover letters, thank you/reminder postcards), mail methodology, and cover letter personalization. For the notification letter mailing step, the address provided by the NCOA vendor is utilized when available. Records that are not updated by the NCOA vendor are mailed to one of the three DEERS addresses: residential address, sponsor address, and unit address. When possible, the residential address was given preference over the sponsor address and likewise the sponsor address is given preference over the unit address. When all records have been assigned an address for the notification letter mailing step, QualPro generates the personalized letters.

The updating of addresses is a continuous process throughout the survey administration cycle. During survey administration, address updates are obtained from multiple sources:

- ✍ Self report by beneficiaries (via telephone, voice mail, or fax).
- ✍ Address correction information from the United States Postal Service (USPS).
- ✍ Out of date forwarding address information from the USPS.
- ✍ Mail items returned by the USPS as non-deliverable.

Updated address information is added to QualPro through the use of the DoD Beneficiary Update System (DoDBUS), an interface created by NRC developers to allow new address information to be entered into QualPro and to track changes when using the DEERS supplied addresses.

Address information received directly from the beneficiary is considered the most accurate and is the first address used whenever possible. Beneficiaries are provided with toll free telephone and toll free fax phone numbers and voice mail option to use in order to update their addresses. Collect calls are also available if a beneficiary cannot access the toll free telephone number. The telephone and fax numbers are printed on the notification letter, the reminder/thank you card, and the cover letter that accompanies the first survey.

The United States Postal Service also provides address update information in the form of Address Correction Services. This service is accessed by the use of the "Address Service Requested" indicated on the notification letter and the outer envelopes of the first and second surveys. Many post offices returned updated address information on diskettes, which are loaded, into QualPro. Post offices that do not have access to this technology return copies of the mail piece with the old and new addresses provided. This information is entered into QualPro through the DoDBUS.

The DoDBUS also provides the interface to enter non-deliverable mail pieces and mark the address used for that mail step as invalid. If other addresses are available, the DoDBUS operator chooses the next available address for the next mail step. When all addresses have been exhausted, the record is marked as a "final non deliverable" and no further mailings were attempted. Second surveys that are returned as non-deliverable were also marked as "final non deliverables" as it was the final mail step in this methodology.

Based on all four quarters of data from the final returns data set, a total of 6,042 beneficiaries did not have sufficient addresses information and were not included in any of the mail steps. The remaining beneficiaries were mailed the notification letter. Prior to mailing the first survey, NRC removed any beneficiaries who were marked as "final non deliverable" or any beneficiary who contacted NRC and refused to participate or was found to be ineligible. The reminder card was sent to all beneficiaries who received the first survey, with the exception of those beneficiaries whose first survey was returned and their record marked as "final non deliverable". Second surveys were mailed to all beneficiaries who did not return a first survey and whose records had not been marked as "final non deliverable".

Table 2.1 summarizes address sources by each of the four beneficiary categories across all four quarters. This table shows the source of the last address used in mailing a survey to a beneficiary. As in past years, the largest number of invalid addresses fell in the Active Duty category. It has been speculated that this is due, in part, to this group being mobile. However, the table also clearly shows that DEERS supplied addresses were used 81% of the time.

•
•
•
•
•

TABLE 2.1

FREQUENCY OF ADDRESS SOURCE BY BENEFICIARY CATEGORY FOR 2001
(N = 180,000)

	Active Duty	Active Duty Dependents	Retirees and Family Members < 65	Retirees and Family Members > 65	Total
No valid address	626 0.34%	148 0.08%	108 0.06%	70 0.03%	952 0.53%
Bad Addresses	1,449 0.81%	525 0.29%	292 0.16%	124 0.69%	2,390 1.33%
Phone call/Voice mail	393 0.22%	273 0.15%	255 0.14%	177 0.09%	1,098 0.61%
ACR	3,433 1.90%	3,543 1.97%	580 0.32%	138 0.08%	7,694 4.27%
Fax	92 0.05%	61 0.03%	78 0.04%	25 0.01%	256 0.14%
NCOA	7,662 4.25%	7,855 4.36%	2,970 1.65%	755 0.42%	19,242 10.69%
DEERS Unit	13,172 7.31%	0 0.00%	27 0.02%	0 0.00%	13,199 7.33%
DEERS Residential	48,525 26.96%	31,451 17.47%	31,749 17.63%	14,752 8.19%	126,477 70.26%
DEERS Sponsor	0 0.00%	5,514 3.06%	1,199 0.67%	183 0.10%	6,896 3.83%
ODF	732 0.41%	373 0.20%	93 0.05%	29 0.02%	1,227 0.68%
Electronic ACR	338 0.19%	111 0.06%	33 0.02%	8 0.00%	490 0.27%
Lexis-Nexis	69 0.04%	10 0.01%	0 0.00%	0 0.00%	79 0.04%
Total	76,491 42.50%	49,864 27.70%	37,384 20.76%	16,261 9.03%	180,000 100.00%

Table 2.2 summarizes the address sources for returned surveys across all four quarters included in the 2000 Adult HCSDb data file. The data shows that nearly 81% of the returned surveys were mailed to the beneficiary address supplied by DEERS.

TABLE 2.2
FREQUENCY OF ADDRESS SOURCES FOR RETURNED SURVEYS - 2001
(N = 59,729)

Address Type	Frequency (n)	Percent of Returns
DEERS Residential	48,471	81.15%
DEERS Sponsor	1,285	2.15%
DEERS Unit	1,580	2.65%
Phone/Voice Mail	605	1.01%
NCOA	6,152	10.30%
Fax	122	0.20%
ACR & ODF	1,443	2.41%
Electronic ACR	71	0.12%
Lexis-Nexis	0	0.00%
Total	59,729	100.00%

Note: If beneficiaries returned more than one completed survey, both surveys were included in the numbers in Table 2.2.

C. LETTER PROCESSING PROCEDURES

A vital component to effective management and monitoring of the data collection process is the Survey Control System (SCS). The SCS ensures that data are accurate, integrated, and available during all phases of the survey administration. NRC's unique identifier known as a "lithocode" links all records in the SCS to the original sample file. The lithocode is a unique identification number assigned by QualPro at the time that letters or surveys are generated. A new lithocode number is created for each mail step. These lithocodes are stored for each beneficiary in a table in the SCS. This allows NRC staff to determine whether a returned survey is a first or second survey and identify instances where a beneficiary may return both the first and second survey. The lithocode also allows the surveys to be monitored without use of a beneficiary's social security number or other information that could identify the beneficiary. Lithocodes are used to identify the beneficiary when returned surveys are scanned, whenever beneficiaries are removed from future mailings due to refusal/ineligibility or no valid address, and when addresses are updated or changed in DoDBUS.

D. SURVEY ADMINISTRATION TIMELINE

The HCSDb mailing process is designed so that each beneficiary with a usable address could receive up to four documents: a notification letter, a first survey, a reminder/thank you card, and a second survey. If a beneficiary returns a first survey, a second survey is not sent. If a beneficiary identifies themselves as refusing to participate or as ineligible, they are removed from future mail steps as well. Beneficiaries who are marked as "final non deliverable" are also removed from future mail steps.

Over all four quarters, a total of 173,958 notification letters were mailed. Each quarter, NRC staff began entering address changes and updating records to indicate beneficiaries who identified themselves as refusing to participate or as ineligible to participate immediately after this mailing. In total, there were 4,344 records marked as "final non deliverable" and 204 records marked as

⋮
refused/ineligible prior to mailing the first survey. The survey is a 16-page booklet accompanied by a cover letter of explanation and a postage paid return envelope. A total of 169,410 first surveys were mailed to beneficiaries during the four quarters.

Prior to the mailing of the first survey, 20 questionnaires were completed by NRC staff and scanned into the SCS. A data set file was created and copies of the questionnaires were sent to the analysis contractor to determine if the file was readable and scanned correctly. After the first mailing, the first 50 questionnaires that were received were scanned and a second data set file was created and sent on for review each year.

Table 2.3 summarizes the HCSDB mailings collectively for all four quarters. Data includes the date of each mail step, the quantity mailed in each step, and the number of records that were removed prior to the next mail step.

TABLE 2.3
MAILING TIMELINE FOR 2001

Mail Step	Action	Records Removed	Sample
	Total Sample Size		180,000
	Subtract no address	952	
	Subtract bad address	5,090	
	Total: beneficiaries not receiving a pre-notification	6,042	
Notification Letter	Subtract PND	4,344	173,958
	Subtract ineligible/refused	204	
	Total	4,548	
First Survey	Subtract PND	669	169,410
	Total	669	
Reminder/Thank You Post Card	Subtract PND	3,906	168,741
	Subtract ineligible/refused	203	
	Subtract 1st Surveys received (as of 1/19/01)	33,414	
	Total	37,523	
Second Survey			131,218

E. PROCESSING AND CLASSIFICATION OF INCOMING SURVEYS

Returned surveys are visually checked for any written comments prior to scanning. Refusal or ineligibility comments are entered into QualPro using the DoDBUS. Any other comments are referred to the Account Director to be forwarded to the United Healthcare Project Officer and then on to the DoD Task Manager.

Each morning, NRC staff open non-deliverables and update address changes or "final non deliverable" status for each record. Surveys are scanned using software called FAQSS. The Scanner Interface module of QualPro receives the information from FAQSS and identifies the beneficiary and their responses to the survey questions.

⋮
Surveys must be imported from the QualPro directory into the FAQSS System by running a "create text definitions files" from the scanner interface application. During the import process, the surveys are run through three passes. In the first pass, the lithocode is read. Any unread lithocodes are manually entered. The system then creates a lithocode list. From the complete lithocode list, QualPro exports the text definition files to match the lithocodes. Lastly, FAQSS separates the files into batches and moves them into the processing queue.

The next step in scanning is batch processing. This template is used by the processor to find response areas and to read the responses as valid or spurious. If the system is not 99 percent certain of a response, it is sent to a data editing workstation.

Any questionable marks as detected by the processor are brought up at the data editing station for review by an editor. The editor decides if the mark is a valid response and enters the appropriate system instructions. If the editor is unable to determine the response, a "non-response" instruction is entered. From scanner interface, a transfer results application is applied which moves the scanning files into the QualPro database and logs the transaction. A final check is then performed to ensure that all surveys have been entered in the QualPro database.

Throughout the administration of HCSDB, all records are marked with a final disposition code known as FLAG_FIN. Some records (such as no valid addresses) can be marked prior to the first mail step. Other records cannot be marked until all mail steps have been completed. A description of the FLAG_FIN variables is in Chapter 3 on page 38.

Table 2.4 documents the cumulative final disposition of the survey sample by each beneficiary group. The ENBGSMPL variable was used to create the beneficiary groups. The ENBGSMPL variable has values 1-10. The value of 1 is = Active Duty; values of 2, 3, & 4 = Active Duty Dependents, values of 5, 6, & 7 = Retired and Family Members < 65; and values of 8, 9, & 10 = Retired and Family Members > 65.

TABLE 2.4

FREQUENCY (N) AND PERCENT DISTRIBUTION OF FINAL DISPOSITION
OF SURVEY SAMPLE BY BENEFICIARY GROUP FOR 2001

Final Survey Disposition	Active Duty	Active Duty Dependents	Retirees and Family Members < 65	Retirees and Family Members > 65	Total
Returned non blank survey	14,835 8.24%	13,189 7.33%	19,176 10.65%	11,809 6.56%	59,009 32.78%
Returned - ineligible	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - temp ill or incapacitated	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - deceased	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - incarcerated or perm incapacitated	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - left military or divorced after reference date	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - not eligible for MHS on reference date	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - other eligible	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Blank - no reason	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
No return - temp ill or incapacitated	0 0.00%	0 0.00%	0 0.00%	3 0.00%	3 0.00%
No return - active refuser	11 0.01%	22 0.01%	19 0.01%	17 0.01%	69 0.04%
No return - deceased	4 0.00%	10 0.01%	46 0.03%	174 0.10%	234 0.14%
No return - incarcerated or perm incapacitated	0 0.00%	1 0.00%	4 0.00%	15 0.01%	20 0.01%
No return - left military or divorced after reference date	5 0.00%	23 0.01%	8 0.00%	1 0.00%	37 0.02%
No return - not eligible on reference date	4 0.00%	23 0.01%	10 0.01%	4 0.00%	41 0.02%
No return - other eligible	20 0.01%	22 0.01%	18 0.01%	10 0.01%	70 0.04%
No return - no reason given	48,770 27.09%	29,755 16.53%	16,034 8.91%	3,166 1.76%	97,275 54.04%
PND - no address remaining	6,069 3.37%	2,644 1.47%	1,357 0.75%	648 0.36%	10,718 5.95%
PND - address remaining	2,919 1.62%	2,963 1.65%	433 0.24%	83 0.05%	6,398 3.55%
Original Non-Locatable - no address at start	3,847 2.14%	1,215 0.68%	728 0.40%	331 0.18%	6,121 3.40%
Beneficiary writes and refuses participation	3 0.00%	1 0.00%	0 0.00%	0 0.00%	4 0.00%
Hospitalized - unknown if temp or perm incapacitated	0 0.00%	0 0.00%	1 0.00%	0 0.00%	1 0.00%
Total	76,487 42.49%	49,868 27.70%	37,384 20.77%	16,261 9.03%	180,000 100.00%

The data in Table 2.5 displays the combined number of first and second surveys returned for Quarters I through IV..

TABLE 2.5
RETURNED SURVEYS BY SURVEY TYPE FOR QUARTERS I-IV

Survey Indicator	First Survey	Second Survey	Total
Returned non-blank survey	48,990 82.02%	10,019 16.77%	59,009 98.79%
Returned non-blank duplicate survey	0 0.00%	720 1.21%	720 1.21%
Total	48,990 82.02%	10,739 17.98%	59,729 100.00%

Note: This table includes duplicate surveys.

Chapter

3

Database

This chapter explains the process of developing the raw survey data into a final database free of inconsistencies and ready for analysis. We discuss the design of the database; cleaning, editing, and implementing the Coding Scheme; record selection; and constructing variables.

A. DATABASE DESIGN

The 2000 Adult HCSDB consists of variables from various sources. When NRC delivers the file to MPR after fielding the sample, the following types of variables are present:

- ✍ DEERS information on beneficiary group, social security number, sex, age, etc.
- ✍ Sampling variables used to place beneficiaries in appropriate strata
- ✍ Core and supplemental questionnaire responses
- ✍ NRC information from fielding the sample, such as scan date and flags developed during the fielding to assist us in determining eligibility

MPR added the following types of variables to the database:

- ✍ Updated DEERS variables from the time of data collection to be used for post-stratification
- ✍ Coding Scheme flags
- ✍ Constructed variables for analysis
- ✍ Weights

In addition, MPR updated and cleaned the questionnaire responses using the coding scheme tables found in Appendix B. Each quarter, the final public-use file will contain only the recoded responses; this will help users to avoid using an uncleaned response for analysis. We structured the final database so that all variables from a particular source are grouped by position. Table 3.1 lists all variables in the annual database by source and briefly describes these sources. For specific information on variable location within the database for the first quarter, refer to the “2000 Adult Health Care Survey of DoD Beneficiaries: Adult Codebook and User’s Guide.”

1. Data Sources

a. DEERS

DMDC provided the sampling frame to MPR prior to the selection of the sample. DEERS information such as sex, date of birth, and service are retained in the database; this data is current as of the time of sample selection.

b. Sampling Variables

MPR developed variables during the sample selection procedure that were instrumental in placing beneficiaries in appropriate strata. Many of the variables are retained on the database.

c. Questionnaire Responses

These variables represent the cleaned values for all responses to the questionnaire. The original values scanned in by NRC are cleaned and recoded as necessary to ensure that responses are consistent throughout the questionnaire. The coding scheme tables found in Appendix B are the basis for insuring data quality.

d. Survey Fielding Variables

In the process of fielding the survey, NRC created a number of variables that we retain in the database. Certain of these variables, information that came in by phone, for example, assist us in determining eligibility.

e. Coding Scheme Flags

Each table of the Coding Scheme (see Appendix B) has a flag associated with it that indicates the pattern of original responses and any recodes that were done. For example, the table for Note 5 has a flag N5.

f. Constructed Variables

MPR constructed additional variables that were used in the TRICARE Consumer Reports, TRICARE Consumer Watch and the National Executive Summary report. Often these variables were regroupings of questionnaire responses or the creation of a binary variable to indicate whether or not a TRICARE standard was met. Complete information on each constructed variable is found in section 3.D.

g. Weights

MPR developed weights for each record in the final database. Weights are required for the following reasons:

- ✍ To compensate for variable probabilities of selection
- ✍ To adjust for differential response rates
- ✍ To improve the precision of survey-based estimates through post-stratification

Weighting procedures are discussed in section 3.E.

•
•
•
•
•

TABLE 3.1

VARIABLES IN THE 2000 ADULT HCSDB DATA FILE

Name	Content/Topic
SAMPLING VARIABLES	
MPRID	Unique MPR identifier
SVCSMPL	Branch of Service
SEXSMPL	Sex
STRATUM	Sampling stratum
CACSMPL	Catchment Area
ENBGSMPL	Enrollment by beneficiary category
STRSMPL	Geographic Stratum
MPCSMPL	Sampling military rank
NHFF	Stratum Sample Size
SUBDEMO	Subvention Area for Over 65
SERVAREA	Service Area
E1	Eligibility indicator for period = 1
E2	Eligibility indicator for period = 2
E3	Eligibility indicator for period = 3
E4	Eligibility indicator for period = 4
SERVAFF	Service Affiliation
DEERS VARIABLES	
MRTLSTAT	Marital Status
RACEETHN	Race/Ethnicity
PNSEXDC	Person Gender
LEGDDSCD	DDS Code
DAGEQY	Age at time of data collection
PCM	Primary Manager Code (CIV or MIL)
TSPSITE	TSP Site (regardless of age)
DBENCAT	Beneficiary Category
DMEDELG	Medical Privilege Code
DSPONSVC	Derived Sponsor Branch of Service
MBRRELCD	Member Relationship Code
MEDTYPE	Medicare Type
PATCAT	Aggregated Beneficiary Category
PNARSNCD	Person Association Reason Code
PNLCATCD	Personnel Category Code (Duty Status)

Name	Content/Topic
FIELDAGE	Age at start of fielding period
FNSTATUS	Final Status
KEYCOUNT	Number of Key Questions Answered
QUESTIONNAIRE RESPONSES	
H00000	Are you the person listed on the envelope?
H00001	Which health plan did you use for all or most of your healthcare in the last 12 months?
H00002	How many months or years in a row have you been in this health plan?
H00003A	Which of the following healthcare plans are you currently covered by - TRICARE Prime?
H00003B	Which of the following healthcare plans are you currently covered by - TRICARE Senior Prime?
H00003C	Which of the following healthcare plans are you currently covered by - TRICARE Extra/Standard (CHAMPUS)?
H00003D	Which of the following healthcare plans are you currently covered by - Medicare Part A?
H00003E	Which of the following healthcare plans are you currently covered by - Medicare Part B?
H00003F	What health plan or health plans are you currently covered by - Medigap health plan?
H00003G	Which of the following healthcare plans are you currently covered by - Federal Employees Health Benefits Program (FEHBP)?
H00003H	Which of the following healthcare plans are you currently covered by - Medicaid?
H00003I	Which of the following healthcare plans are you currently covered by - Civilian HMO?
H00003J	Which of the following healthcare plans are you currently covered by - Other civilian?
H00003K	Which of the following healthcare plans are you currently covered by - USFHP?
H00003L	Which of the following healthcare plans are you currently covered by - Not sure?
H00003M	Which of the following healthcare plans are you currently covered by - Veterans?
H00004	How is your enrollment fee or insurance policy premium paid?
H00005	In the last 3 months, have you ever used military treatment facility (MTF) outpatient services on a space available basis?
H00006	When you joined your health plan or at any time since then, did you get a new personal doctor or nurse?
H00007	With the choices your health plan gave you, how much of a problem, if any, was it to get a personal doctor or nurse you are happy with?
H00008	Do you have one person you think of as your personal doctor or nurse?
H00009	Use any number from 0 to 10 where 0 is the worst personal doctor or nurse possible, and 10 is the best personal doctor or nurse possible. How would you rate your personal doctor or nurse now?
H00010	Are you currently enrolled in TRICARE Prime or Senior Prime?
H00011	As a member of TRICARE Prime or Senior Prime, do you have a Primary Care Manager (PCM) based in a military or civilian facility?
H00012	Do you know your PCM's name?
H00013	In the last 12 months, did you or a doctor or nurse think you needed to see a specialist?
H00014	In the last 12 months, how much of a problem, if any, was it to get a referral to a specialist that you needed to see?

Name	Content/Topic
H00015	In the last 12 months, did you see a specialist?
H00016	Use any number from 0 to 10 where 0 is the worst specialist possible, and 10 is the best specialist possible. How would you rate the specialist?
H00017	In the last 12 months, was the specialist you saw most often the same doctor as your personal doctor?
H00018	In the last 12 months, did you call a doctor's office or clinic during regular office hours to get help or advice for yourself?
H00019	In the last 12 months, when you called during regular office hours, how often did you get the help or advice you need?
H00020	In the last 12 months, did you make any appointments with a doctor or other health provider for regular or routine health care?
H00021	In the last 12 months, how often did you get an appointment for regular or routine healthcare as soon as you wanted?
H00022	In the last 12 months, how many days did you usually have to wait between making an appointment for regular or routine care and actually seeing a provider?
H00023	In the last 12 months, did you have an illness or injury that needed care right away from a doctor's office, clinic or emergency room?
H00024	In the last 12 months, when you needed care right away for an illness or injury, how often did you get care as soon as you wanted?
H00025	In the last 12 months, how long did you usually have to wait between trying to get care and actually seeing a provider for an illness or injury?
H00026	In the last 12 months, how many times did you go to an emergency room to get care for yourself?
H00027	In the last 12 months (not counting times you went to an emergency room) how many times did you go to a doctor's office or clinic to get care for yourself?
H00028	In the last 12 months, how much of a problem, if any, was it to get care you or a doctor believed necessary?
H00029	In the last 12 months, how much of a problem, if any, were delays in healthcare while you waited for approval from your health plan?
H00030	In the last 12 months, how often did you wait in the doctor's office or clinic more than 15 minutes past your appointment time to see the person you went to see?
H00031	In the last 12 months, how often did office staff at a doctor's office or clinic treat you with courtesy and respect?
H00032	In the last 12 months, how often were office staff at a doctor's office or clinic as helpful as you thought they should be?
H00033	In the last 12 months, how often did doctors or other health providers listen carefully to you?
H00034	In the last 12 months, how often did doctors or other health providers explain things in a way you could understand?
H00035	In the last 12 months, how often did doctors or other health providers show respect for what you had to say?
H00036	In the last 12 months, how often did doctors or other health providers spend enough time with you?
H00037	Use any number from 0 to 10 where 0 is the worst healthcare possible, and 10 is the best healthcare possible. How would you rate your healthcare?
H00038	Is there a military treatment facility (MTF) conveniently located to you?

Name	Content/Topic
H00039	In the past 12 months, how much of your healthcare did you receive from a MTF? Do not count MTF pharmacy use as healthcare.
H00040	In the past 12 months, how many of your prescriptions were filled at a MTF pharmacy?
H00041	In the last 12 months, how many prescriptions did you have that were written by a civilian provider but were filled at a military pharmacy? Include refills.
H00042	In the last 12 months, where did you go most often for your health care?
H00043	In the last 12 months, did you or anyone else send in any claims to your health plan?
H00044	In the last 12 months, how often did your health plan handle your claims in a reasonable time?
H00045	In the last 12 months, how often did your health plan handle your claims correctly?
H00046	In the last 12 months, before you went for care, how often did your health plan make it clear how much you would have to pay?
H00047	In the last 12 months, did you look for any information in written materials from your health plan?
H00048	In the last 12 months, how much of a problem, if any, was it to find or understand information in the written materials?
H00049	In the last 12 months, did you call your health plan's customer service to get information or help?
H00050	In the last 12 months, how much of a problem, if any, was it to get the help you needed when you called your health plan's customer service?
H00051	In the last 12 months, have you called or written your health plan with a complaint or problem?
H00052	How long did it take for the health plan to resolve your complaint?
H00053	Was your complaint or problem settled to your satisfaction?
H00054	In the last 12 months, did you have any experiences with paperwork for your health plan?
H00055	In the last 12 months, how much of a problem, if any, did you have with paperwork for your health plan?
H00056	Use any number from 0 to 10 where 0 is the worst health plan possible, and 10 is the best health plan possible. How would you rate your health plan now?
H00057	If you are currently enrolled in TRICARE Prime, how likely are you to disenroll from TRICARE Prime for a different type of health plan in the next 12 months?
H00058	If you are not currently enrolled in TRICARE Prime, how likely are you to enroll in TRICARE Prime in the next 12 months?
H00059	In the last 12 months, how much did you and your family spend for healthcare that was not covered by your health plan?
H00060	In the past 12 months, how many times did you need to visit a doctor, but put it off because of the cost involved?
H00061	Not counting when you were sick or pregnant, when was the last time you had a general medical or physical examination or checkup?
H00062	When did you last have a blood pressure reading?
H00063	Do you know if your blood pressure is too high or not?
H00064	When did you last have a cholesterol screening, that is, a test to determine the level of cholesterol in your blood?
H00065	When did you last have a flu shot?
H00066	Have you ever smoked at least 100 cigarettes in your entire life?

Name	Content/Topic
H00067	Do you now smoke everyday, some days or not at all?
H00068	How long has it been since you quit smoking cigarettes?
H00069	In the last 12 months, on how many visits were you advised to quit smoking by a doctor or other health provider in your plan?
H00070	Are you male or female?
H00071	When was the last time you had a prostate gland examination or blood test for prostate disease?
H00072	When did you last have a Pap smear test?
H00073A	Are you under age 40?
H00073B	When was the last time your breasts were checked by mammography?
H00074	When was the last time you had a breast exam by a health care professional?
H00075	Have you been pregnant in the last 12 months or are you pregnant now?
H00076A	In what trimester is your pregnancy?
H00076B	In which trimester did you first receive prenatal care?
H00077	In general, how would you rate your health now?
SREDA	What is the highest grade or level of school that you have completed - 8th grade or less?
H00079	Are you of Hispanic or Latino origin or descent?
SRRACEA	What is your race - White?
SRRACEB	What is your race - Black or African American?
SRRACEC	What is your race - American Indian or Alaska Native?
SRRACED	What is your race - Asian (e.g., Asian Indian, Chinese, Filipino, Japanese, Korean, or Vietnamese)?
SRRACEE	What is your race - Native Hawaiian or other Pacific Islander (e.g., Samoan, Guamanian, or Chamorro)?
SRAGE	What is your age now?
H00082A	Recent legislation has expanded TRICARE eligibility to Medicare eligibles enrolled in Part B as of 1 October 2001. Through a combination of Medicare and TRICARE payments, these changes will eliminate most of your out of pocket expenses such as co-payments and cost shares for your healthcare. As a result of this legislation, how much of your healthcare would you get from a MTF?
H00082B	Are you likely to fill any prescriptions at a MTF, regardless of how much healthcare you receive at a MTF?
H00083A	Which of the following are important to you in your decision to use a MTF for your healthcare - Cost to you?
H00083B	Which of the following are important to you in your decision to use a MTF for your healthcare - Convenience of location?
H00083C	Which of the following are important to you in your decision to use a MTF for your healthcare - Quality of healthcare?
H00083D	Which of the following are important to you in your decision to use a MTF for your healthcare - Convenience of telephone access?
H00083E	Which of the following are important to you in your decision to use a MTF for your healthcare - Timeliness of appointments?
H00083F	Which of the following are important to you in your decision to use a MTF for your healthcare - Military courtesy?

Name	Content/Topic
H00083G	Which of the following are important to you in your decision to use a MTF for your healthcare - Relationship with a personal physician?
H00083H	Which of the following are important to you in your decision to use a MTF for your healthcare - Co-location of services in MTF?
H00083I	Which of the following are important to you in your decision to use a MTF for your healthcare - Lack of paperwork/claims?
H00084	Of those reasons you marked in Question 108, which is the single most important reason to you in your decision to use a MTF for your healthcare?
H00085A	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Retiree organization newsletter?
H00085B	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Health Benefits Advisor?
H00085C	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Pamphlets in a MTF?
H00085D	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Internet?
H00085E	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Base newspaper?
H00085F	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Information in retired pay statement?
H00085G	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - T.V.?
H00085H	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Radio?
H00085I	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Friends or relatives?
H00085J	Which of the following sources are you likely to use for information regarding changes to your military healthcare benefit - Beneficiary Counseling Assistance Coordinators (BCACs)?
S00C01	Is this person a general doctor, a specialist doctor, a physician assistant, or a nurse?
S00C02	How many months or years have you been going to your personal doctor or nurse?
S00C03	Do you have a physical or medical condition that seriously interferes with your ability to work, attend school, or manage your day-to-day activities?
S00C04	Does your personal doctor or nurse understand how any health problems you have affect your day-to-day life?
S00C05	In the last 12 months, how many times did you go to a specialist for care for yourself?
S00C06	In the last 12 months, were any decisions made about your healthcare?
S00C07	In the last 12 months, how often were you involved as much as you wanted in these decisions about your healthcare?
S00C08	In the last 12 months, how much of a problem, if any, was it to get your doctors or other health providers to agree with you on the best way to manage your health conditions or problems?
S00C09	In the last 12 months, did you have a health problem for which you needed special medical equipment, such as a cane, a wheelchair, or oxygen equipment?

Name	Content/Topic
S00C10	In the last 12 months, how much of a problem, if any, was it to get the special medical equipment you needed through your health plan?
S00C11	In the last 12 months, did you have any health problems that needed special therapy, such as physical, occupational, or speech therapy?
S00C12	In the last 12 months, how much of a problem, if any, was it to get the special therapy you needed through your health plan?
S00C13	In the last 12 months, did you need someone to come into your home to give you home healthcare or assistance?
S00C14	In the last 12 months, how much of a problem, if any, was it to get the care or assistance you needed through your health plan?
S00C15	Because of any impairment or health problem, do you need the help of other persons with your personal care needs, such as eating, dressing, or getting around the house?
S00C16	Because of any impairment or health problem, do you need help with your routine needs, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?
S00C17	Do you have a physical or medical condition that seriously interferes with your independence, participation in the community, or quality of life?
S00C18	Use any number from 0 to 10 where 0 is the worst your plan could do and 10 is the best your plan could do. How would you rate your health plan now?
S00C19	In the last 12 months, have you been a patient in a hospital overnight or longer?
S00C20	Do you now have any physical or medical conditions that have lasted for at least 3 months? (Women: do not include pregnancy.)
S00C21	In the last 12 months, have you seen a doctor or other health provider more than twice for any of these conditions?
S00C22	Have you been taking prescription medicine for at least 3 months for any of these conditions?
S00M01	In the last 12 months, did you need any treatment or counseling for a personal or family problem?
S00M02	In the last 12 months, how much of a problem, if any, was it to get the treatment or counseling you needed through your health plan?
S00M03	How would you rate your treatment or counseling?
S00A01A	Has a doctor ever told you that you have any of the following?—Hardening of the arteries or arteriosclerosis
S00A01B	Has a doctor ever told you that you have any of the following?—Hypertension, sometimes called high blood pressure
S00A01C	Has a doctor ever told you that you have any of the following?—A myocardial infarction or heart attack
S00A01D	Has a doctor ever told you that you have any of the following?—Angina pectoris or coronary heart disease
S00A01E	Has a doctor ever told you that you have any of the following?—Other heart conditions such as congestive heart failure, problems with the valves in your heart, or problems with the rhythm of your heart beat
S00A01F	Has a doctor ever told you that you have any of the following?—A stroke, brain hemorrhage, or cerebrovascular accident
S00A01G	Has a doctor ever told you that you have any of the following?—Skin cancer
S00A01H	Has a doctor ever told you that you have any of the following?—Any other kind of cancer

Name	Content/Topic
S00A01I	Has a doctor ever told you that you have any of the following?—Diabetes, high blood sugar, or sugar in your urine
S00A01J	Has a doctor ever told you that you have any of the following?—Rheumatoid arthritis
S00A01K	Has a doctor ever told you that you have any of the following?—Arthritis (including osteoarthritis) other than rheumatoid arthritis
S00A01L	Has a doctor ever told you that you have any of the following?—Osteoporosis, sometimes called fragile or brittle bones
S00A01M	Has a doctor ever told you that you have any of the following?—A broken hip
S00A01N	Has a doctor ever told you that you have any of the following?—Alzheimer's disease or dementia
S00A01O	Has a doctor ever told you that you have any of the following?—A mental or psychiatric disorder
S00A01P	Has a doctor ever told you that you have any of the following?—Parkinson's disease
S00A01Q	Has a doctor ever told you that you have any of the following?—Emphysema, asthma, or COPD
S00A01R	Has a doctor ever told you that you have any of the following?—Complete or partial paralysis
S00A02	In the past twelve months, have you used MTFs for healthcare other than prescription drugs?
S00A03	In the past twelve months, how many times did you visit a doctor's office, clinic, or emergency room at a MTF?
S00A04	In the past twelve months, how many nights did you stay overnight as a patient at a MTF?
S00A05A	In the past twelve months, did you use any MTF for any of the following?—Emergency care from an emergency room
S00A05B	In the past twelve months, did you use any MTF for any of the following?—Urgent care from someplace other than an emergency room
S00A05C	In the past twelve months, did you use any MTF for any of the following?—Preventative care, such as a prostate exam or a breast exam
S00A05D	In the past twelve months, did you use any MTF for any of the following?—Routine care, such as a physical check-up
S00A05E	In the past twelve months, did you use any MTF for any of the following?—Hospital care in which you stayed overnight at a MTF
S00A05F	In the past twelve months, did you use any MTF for any of the following?—Labs and x-rays
S00A05G	In the past twelve months, did you use any MTF for any of the following?—Surgery or diagnostic procedures that did not require an overnight stay
S00A05H	In the past twelve months, did you use any MTF for any of the following?—Care from a specialist
S00A06	Are you covered by Medicare Part B now?
S00A07	With this new benefit, will you begin paying the Medicare Part B premium?
S00A08	Are you enrolled in TRICARE Senior Prime now?
S00A09	As a result of the new benefit, will you disenroll from TRICARE Senior Prime after October 1, 2001?
S00A10	As a result of the new benefit, will you change your use of space-available care at MTFs after October 1, 2001?
S00A11A	Will you use space-available care at a MTF for any of the following reasons?—Emergency care from an emergency room
S00A11B	Will you use space-available care at a MTF for any of the following reasons?—Prescription drugs

Name	Content/Topic
S00A11C	Will you use space-available care at a MTF for any of the following reasons?—Urgent care from someplace other than an emergency room
S00A11D	Will you use space-available care at a MTF for any of the following reasons?—Preventive care, such as a prostate exam or a breast exam
S00A11E	Will you use space-available care at a MTF for any of the following reasons?—Routine care, such as a physical check-up
S00A11F	Will you use space-available care at a MTF for any of the following reasons?—Hospital care requiring a stay overnight at an MTF
S00A11G	Will you use space-available care at a MTF for any of the following reasons?—Labs and x-rays
S00A11H	Will you use space-available care at a MTF for any of the following reasons?—Surgery or diagnostic procedures that do not require an overnight stay
S00A11I	Will you use space-available care at a MTF for any of the following reasons?—Care from a specialist
S00A11J	Will you use space-available care at a MTF for any of the following reasons?—I will not use space-available care at a MTF
S00A12	If you were given the option of enrolling in TRICARE Prime, would you enroll?
S00A13	If TRICARE Prime did not allow you to have a MTF or military doctor as your PCM, would you enroll?
S00H01	In the past twelve months, did you file any claims to a TRICARE processor for reimbursement of your expense for your health care or dental care?
S00H02	In the past twelve months, how often were your TRICARE claims submitted by your doctor's office?
S00H03	In the past twelve months, have you received and EOB from TRICARE?
S00H04	In the past twelve months, how much of a problem was it to understand the EOB TRICARE sent you?
S00H05	In the past twelve months, have you received a bill from a doctor, hospital, or company for health care you received?
S00H06	In the past twelve months, has a doctor, hospital, or company informed you that TRICARE has not paid a bill for health care you received?
S00H07	In the past twelve months, how often did the bills for medical care you received contain errors?
S00H08	In the past twelve months, have you paid a bill or bills containing errors for health care received?
S00H09A	Why did you pay when the bill contained errors?—To avoid harming my career or my spouse's career
S00H09B	Why did you pay when the bill contained errors?—To avoid harming my credit rating
S00H09C	Why did you pay when the bill contained errors?—I did not know where to get help with my TRICARE claims
S00H09D	Why did you pay when the bill contained errors?—To save time
S00H09E	Why did you pay when the bill contained errors?—I could not get help
S00H09F	Why did you pay when the bill contained errors?—To avoid legal action
S00H09G	Why did you pay when the bill contained errors?—The amount of money was small
S00H010	In the past twelve months, have you been contacted by a debt collection agency about one or more of your TRICARE claims?
S00H011A	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—A Beneficiary Counseling and Assistance Coordinator

Name	Content/Topic
S00H011B	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—A Beneficiary Service Representative
S00H011C	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—A Debt Collection Assistance Officer
S00H011D	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—My primary doctor
S00H011E	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—A person other than my doctor in my doctor's office
S00H011F	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—My MTF commander
S00H011G	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—My MTF patient representative
S00H011H	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—A person at my MTF other than a BCAC, DCAO, MFT commander or MTF patient representative
S00H011I	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—A person at a civilian TRICARE contractor's facility other than a BSR, my doctor, or a member of his/her staff
S00H011J	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—A toll-free phone number
S00H011K	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—A friend or neighbor
S00H011L	In the past twelve months, how helpful were the people you contacted about problems with your TRICARE, EOB's, or medical bills?—An attorney
S00H12	In the past twelve months, have you received a negative credit report because of problems with your TRICARE claims?
S00H13	In the past twelve months, have you taken steps to repair the harm to your credit rating?
S00H14	How much of a problem has it been to restore your credit rating?
S00H15	In the past twelve months, have you been turned down for a loan or mortgage because of harm to your credit rating caused by TRICARE claims?
S00I01	Currently, are you covered by Medicare Part A?
S00I02	Currently, are you covered by Medicare Part B?
S00I03	Currently, are you covered by Medicare supplemental insurance?
S00S01	Overall, how would you rate your health during the past four weeks?
S00S02	During the past four weeks, how much did physical health problems limit your usual physical activities?
S00S03	During the past four weeks, how much difficulty did you have doing your daily work, both at home and away from home because of your physical health?
S00S04	How much bodily pain have you had during the past four weeks?
S00S05	During the past four weeks, how much energy did you have?
S00S06	During the past four weeks, how much did your physical health or emotional problems limit your social activities with family or friends?
S00S07	During the past four weeks, how much have you been bothered by emotional problems?

Name	Content/Topic
S00S08	During the past four weeks, how much did personal or emotional problems keep you from doing your usual work, school or other daily activities?
S00S09	Compared to one year ago, how would you rate your health in general now?
NRC SURVEY FIELDING VARIABLES	
FLAG_FIN	Final Disposition
DUPFLAG	Multiple Response Indicator
CODING SCHEME FLAGS AND COUNTS	
N1	Coding Scheme flag for Note 1
N2	Coding Scheme flag for Note 2
N3	Coding Scheme flag for Note 3
N4	Coding Scheme flag for Note 4
N5	Coding Scheme flag for Note 5
N6	Coding Scheme flag for Note 6
N7	Coding Scheme flag for Note 7
N8	Coding Scheme flag for Note 8
N9	Coding Scheme flag for Note 9
N10	Coding Scheme flag for Note 10
N11	Coding Scheme flag for Note 11
N12	Coding Scheme flag for Note 12
N13	Coding Scheme flag for Note 13
N14	Coding Scheme flag for Note 14
N15	Coding Scheme flag for Note 15
N16	Coding Scheme flag for Note 16
N17	Coding Scheme flag for Note 17
N18	Coding Scheme flag for Note 18
N18A	Coding Scheme flag for Note 18A
N18B	Coding Scheme flag for Note 18B
N18C	Coding Scheme flag for Note 18C
N19	Coding Scheme flag for Note 19
N20	Coding Scheme flag for Note 20
N21	Coding Scheme flag for Note 21
N22	Coding Scheme flag for Note 22
N23	Coding Scheme flag for Note 23
N23A	Coding Scheme flag for Note 23 A
N23B	Coding Scheme flag for Note 23 B
N23C	Coding Scheme flag for Note 23 C
N24	Coding Scheme flag for Note 24

Name	Content/Topic
N25	Coding Scheme flag for Note 25
N25A	Coding Scheme flag for Note 25A
N25B	Coding Scheme flag for Note 25B
N25C	Coding Scheme flag for Note 25C
N26	Coding Scheme flag for Note 26
N27	Coding Scheme flag for Note 27
N28	Coding Scheme flag for Note 28
MISS_1	Count of skip pattern violations
MISS_4	Count of incomplete grid errors
MISS_5	Count of scalable response of “don’t know” or “not sure”
MISS_6	Count of not applicable/valid skips
MISS_7	Count of out-of-range errors
MISS_8	Count of multiple response errors
MISS_9	Count of no response (invalid skip)
MISS_TOT	Total number of missing responses
CONSTRUCTED VARIABLES	
QUARTER	Survey Quarter
XENRLMT	Beneficiary’s enrollment status in TRICARE Prime
XENR_PCM	TRICARE Enrollment by PCM type
XINS_COV	Insurance Coverage
XQENROLL	TRICARE Enrollment according to questionnaire responses
XREGION	Beneficiary’s regional assignment (15 regions and unassigned)
CONUS	CONUS/OCONUS Indicator
OUTCATCH	Out of catchment area Indicator
XSEXA	Beneficiary’s sex- Male or Female
XBNFGRP	Beneficiary group with population age 65 and over excluded from Active Duty and Family Members of Active Duty
KENRINTN	Intention to enroll, coded as binary form 1 / 2
KDISENRL	Intention to disenroll, coded as binary form 1 / 2
KMILOFFC	Waited more than 15 minutes at military facility, coded in binary form 1 / 2
KCIVOFFC	Waited more than 15 minutes at civilian facility, coded in binary form 1 / 2
KBGPRB1	Big problem getting referrals to a specialist coded in binary form 1 / 2
KBGPRB2	Big problem getting necessary care coded in binary form 1 / 2
KMILOPQY	Outpatient visits to military facility
KCIVOPQY	Outpatient visits to civilian facility
KCIVINS	Beneficiary is covered by civilian insurance
KCOST_2	Out-of-pocket costs greater than \$500

Name	Content/Topic
KMEDIGAP	Beneficiary is covered by Medigap
KPRSCPTN	7 or more civilian prescriptions filled by military pharmacy, coded in binary form 1/2
KBRSTCR	Women age 40 and older who have ever had a mammogram and a breast exam
HP_PRNTL	If pregnant in the last year, received prenatal care in first trimester, coded in binary form 1 / 2
HP_MAMOG	Women age 40 and over, had a mammogram within past 2 years, coded in binary form 1 / 2
HP_MAM50	Women age 50 and over, had a mammogram within past 2 years, coded in binary form 1 / 2
HP_PAP	For all women, had a pap smear in last 3 years, coded in binary form 1 / 2
HP_BP	Had a blood pressure check in last 2 years and know results, coded in binary form 1 / 2
HP_FLU	For persons age 65 and older, had a flu shot in last 12 months, coded in binary form 1 / 2
HP_PROS	For men age 50 and over, had a prostate exam within last 12 months, coded in binary form 1 / 2
HP_GP	Had a general medical or physical examination or checkup in the last 12 months.
HP_BRST	For all women age 40 and older, had a breast physical exam in the past 12 months.
HP_CHOL	Had a cholesterol screening in the past 5years.
HP_SMOKE	For all current adult smokers and those who quit smoking within the past year, were advised to quit smoking by a health provider in the past 12 months
SF8PF	Physical Functioning
SF8RP	Role Physical
SF8BP	Bodily Pain
SF8GH	General Health
SF8VT	Vitality
SF8SF	Social Functioning
SF8RE	Role Emotional
SF8MH	Mental Health
PCS_8	Physical Health Summary
MCS_8	Mental Health Summary
KMID_H	Below Median Physical Health
KMID_MH	Below Median Mental Health
WEIGHTS	
BWT	Basic Sampling Weight
ADJ_CELL	Adjusted STRATUM Cell
WRWT	Final weight
WRWT1	Replicated/Jackknife weight 1
WRWT2	Replicated/Jackknife weight 2
WRWT3	Replicated/Jackknife weight 3
WRWT4	Replicated/Jackknife weight 4
WRWT5	Replicated/Jackknife weight 5
WRWT6	Replicated/Jackknife weight 6

Name	Content/Topic
WRWT7	Replicated/Jackknife weight 7
WRWT8	Replicated/Jackknife weight 8
WRWT9	Replicated/Jackknife weight 9
WRWT10	Replicated/Jackknife weight 10
WRWT11	Replicated/Jackknife weight 11
WRWT12	Replicated/Jackknife weight 12
WRWT13	Replicated/Jackknife weight 13
WRWT14	Replicated/Jackknife weight 14
WRWT15	Replicated/Jackknife weight 15
WRWT16	Replicated/Jackknife weight 16
WRWT17	Replicated/Jackknife weight 17
WRWT18	Replicated/Jackknife weight 18
WRWT19	Replicated/Jackknife weight 19
WRWT20	Replicated/Jackknife weight 20
WRWT21	Replicated/Jackknife weight 21
WRWT22	Replicated/Jackknife weight 22
WRWT23	Replicated/Jackknife weight 23
WRWT24	Replicated/Jackknife weight 24
WRWT25	Replicated/Jackknife weight 25
WRWT26	Replicated/Jackknife weight 26
WRWT27	Replicated/Jackknife weight 27
WRWT28	Replicated/Jackknife weight 28
WRWT29	Replicated/Jackknife weight 29
WRWT30	Replicated/Jackknife weight 30
WRWT31	Replicated/Jackknife weight 31
WRWT32	Replicated/Jackknife weight 32
WRWT33	Replicated/Jackknife weight 33
WRWT34	Replicated/Jackknife weight 34
WRWT35	Replicated/Jackknife weight 35
WRWT36	Replicated/Jackknife weight 36
WRWT37	Replicated/Jackknife weight 37
WRWT38	Replicated/Jackknife weight 38
WRWT39	Replicated/Jackknife weight 39
WRWT40	Replicated/Jackknife weight 40
WRWT41	Replicated/Jackknife weight 41
WRWT42	Replicated/Jackknife weight 42

Name	Content/Topic
WRWT43	Replicated/Jackknife weight 43
WRWT44	Replicated/Jackknife weight 44
WRWT45	Replicated/Jackknife weight 45
WRWT46	Replicated/Jackknife weight 46
WRWT47	Replicated/Jackknife weight 47
WRWT48	Replicated/Jackknife weight 48
WRWT49	Replicated/Jackknife weight 49
WRWT50	Replicated/Jackknife weight 50
WRWT51	Replicated/Jackknife weight 51
WRWT52	Replicated/Jackknife weight 52
WRWT53	Replicated/Jackknife weight 53
WRWT54	Replicated/Jackknife weight 54
WRWT55	Replicated/Jackknife weight 55
WRWT56	Replicated/Jackknife weight 56
WRWT57	Replicated/Jackknife weight 57
WRWT58	Replicated/Jackknife weight 58
WRWT59	Replicated/Jackknife weight 59
WRWT60	Replicated/Jackknife weight 60
CWRWT	Combined Annual weight
CWRWT1	Replicated/Jackknife weight 1
CWRWT2	Replicated/Jackknife weight 2
CWRWT3	Replicated/Jackknife weight 3
CWRWT4	Replicated/Jackknife weight 4
CWRWT5	Replicated/Jackknife weight 5
CWRWT6	Replicated/Jackknife weight 6
CWRWT7	Replicated/Jackknife weight 7
CWRWT8	Replicated/Jackknife weight 8
CWRWT9	Replicated/Jackknife weight 9
CWRWT10	Replicated/Jackknife weight 10
CWRWT11	Replicated/Jackknife weight 11
CWRWT12	Replicated/Jackknife weight 12
CWRWT13	Replicated/Jackknife weight 13
CWRWT14	Replicated/Jackknife weight 14
CWRWT15	Replicated/Jackknife weight 15
CWRWT16	Replicated/Jackknife weight 16
CWRWT17	Replicated/Jackknife weight 17

Name	Content/Topic
CWRWT18	Replicated/Jackknife weight 18
CWRWT19	Replicated/Jackknife weight 19
CWRWT20	Replicated/Jackknife weight 20
CWRWT21	Replicated/Jackknife weight 21
CWRWT22	Replicated/Jackknife weight 22
CWRWT23	Replicated/Jackknife weight 23
CWRWT24	Replicated/Jackknife weight 24
CWRWT25	Replicated/Jackknife weight 25
CWRWT26	Replicated/Jackknife weight 26
CWRWT27	Replicated/Jackknife weight 27
CWRWT28	Replicated/Jackknife weight 28
CWRWT29	Replicated/Jackknife weight 29
CWRWT30	Replicated/Jackknife weight 30
CWRWT31	Replicated/Jackknife weight 31
CWRWT32	Replicated/Jackknife weight 32
CWRWT33	Replicated/Jackknife weight 33
CWRWT34	Replicated/Jackknife weight 34
CWRWT35	Replicated/Jackknife weight 35
CWRWT36	Replicated/Jackknife weight 36
CWRWT37	Replicated/Jackknife weight 37
CWRWT38	Replicated/Jackknife weight 38
CWRWT39	Replicated/Jackknife weight 39
CWRWT40	Replicated/Jackknife weight 40
CWRWT41	Replicated/Jackknife weight 41
CWRWT42	Replicated/Jackknife weight 42
CWRWT43	Replicated/Jackknife weight 43
CWRWT44	Replicated/Jackknife weight 44
CWRWT45	Replicated/Jackknife weight 45
CWRWT46	Replicated/Jackknife weight 46
CWRWT47	Replicated/Jackknife weight 47
CWRWT48	Replicated/Jackknife weight 48
CWRWT49	Replicated/Jackknife weight 49
CWRWT50	Replicated/Jackknife weight 50
CWRWT51	Replicated/Jackknife weight 51
CWRWT52	Replicated/Jackknife weight 52
CWRWT53	Replicated/Jackknife weight 53

Name	Content/Topic
CWRWT54	Replicated/Jackknife weight 54
CWRWT55	Replicated/Jackknife weight 55
CWRWT56	Replicated/Jackknife weight 56
CWRWT57	Replicated/Jackknife weight 57
CWRWT58	Replicated/Jackknife weight 58
CWRWT59	Replicated/Jackknife weight 59
CWRWT60	Replicated/Jackknife weight 60

2. Variable Naming Conventions

To preserve continuity with survey data from previous years, MPR followed the same variable naming conventions for the core questions used for the 1996, 1997, 1998 and 1999 survey data with a few exceptions. Variable naming conventions for the 2000 Adult HCSDB core and supplemental questions are shown in Table 3.2. The suffix “__O” will be used to distinguish the original version of the variable from the recoded version. The public use files for the adult survey will contain only recoded variables.

Each quarter, the questionnaire will include a battery of questions on specific health care topics concerning services offered to MHS beneficiaries. Supplemental questions contain the same number of alphanumeric characters as the core questions; each variable begins with an “S” to distinguish it as a supplemental question.

3. Missing Value Conventions

The 2000 conventions for missing variables are the same as the 1999 conventions. All missing value conventions used in the 2000 HCSDB are shown in Table 3.3

TABLE 3.2
NAMING CONVENTIONS FOR 2000 HCSDb VARIABLES – QUARTERS I-IV
(VARIABLES REPRESENTING SURVEY QUESTIONS)

1 st Character: Survey Type	2 nd – 3 rd Characters: Survey Year	4 th – 6 th Characters: Question #	Additional Characters: Additional Information
<p>H= Health Beneficiaries (18 and older, Adult Questionnaire)</p> <p>-----</p> <p>S = Supplemental Question</p>	00	<p>001 to 085</p> <p>-----</p> <p>--</p> <p>Quarter I C01-C22 – supplemental questions on chronic conditions.</p> <p>Quarter II M01-M03 – supplemental questions on mental health services; A01-A13 supplemental questions on current use and planned use of MTFs by beneficiaries age 65 and over.</p> <p>Quarter III H01-H15 – supplemental questions on TRICARE claims</p> <p>Quarter IV I01-I03 – supplemental questions on insurance coverage by Medicare; S01-S09 – supplemental questions using the SF-8 battery of health status questions.</p>	<p>A to J are used to label responses associated with a multiple response question</p> <p>_O denotes an original version of a recoded variable</p> <p>-----</p>

(Constructed Variables)

1 st Characters: Variable Group	Additional Characters: Additional Information
SR=Self-reported demographic data	Descriptive text, e.g., SREDA
N=Coding scheme notes	Number referring to Note, e.g., N2
X=Constructed independent variable	Descriptive text, e.g., XREGION
HP=Constructed <i>Healthy People</i> 2010 variable	Descriptive text, e.g., HP_BP (had blood pressure screening in past two years and know the results)
K=Constructed dependent variables	Descriptive text, e.g., KMILOPQY (total number of outpatient visits to military facility)
SF8=SF8 Health status variables	Descriptive text, e.g., SF8MH (mental health score)

TABLE 3.3

CODING OF MISSING DATA AND “NOT APPLICABLE” RESPONSES

ASCII or Raw Source Data	Edited and Cleaned SAS Data	Description
Numeric	Numeric	
-9	.	No response
-8	.A	Multiple response error
-7	.O	Out of range error
-6	.N	Not applicable or valid skip
-5	.D	Scalable response of “Don’t know” or “Not sure”
-4	.I	Incomplete grid error
-1	.C	Question should have been skipped, not answered
	.B	No survey received

B. CLEANING AND EDITING

Data cleaning and editing procedures ensure that the data are free of inconsistencies and errors. Standard edit checks include the following:

- ✍ Checks for multiple surveys returned for any one person
- ✍ Checks for multiple responses to any question that should have one response
- ✍ Range checks for appropriate values within a single question
- ✍ Logic checks for consistent responses throughout the questionnaire

We computed frequencies and cross tabulations of values at various stages in the process to verify the accuracy of the data. Data editing and cleaning proceeded in the following way:

1. Scan Review

NRC spot checked the scanned results from the original survey to verify the accuracy of the scanning process and made any necessary corrections by viewing the returned survey.

2. Additional NRC Editing and Coding

In preparing the database for MPR, NRC used variable names and response values provided by MPR in the annotated questionnaires (see Appendix A). NRC delivered to MPR a database in SAS format. In this database, any questions with no response were encoded with a SAS missing value code of ' '. Also, as part of the scanning procedure, NRC entered the SAS missing value of '.A' for any question with multiple responses where a single response was required. Multiple column grids, such as the one for out-of-pocket expenses, that were not filled in completely were given the SAS missing value of '.I'; there were two exceptions to this rule:

- ✍ If there was a response in the right column(s) and none in the left column(s), the field was zero-filled rather than coded as an incomplete grid
- ✍ If there was a response in the left column(s) and none in the right column(s), the field was right-adjusted and then zero-filled rather than coded as an incomplete grid

3. Duplicate or Multiple Surveys

At this stage, NRC delivered to MPR a file containing one record for every beneficiary in the sample, plus additional records for every duplicate survey or multiple surveys received from any beneficiary. These duplicates and multiples were eliminated during record selection, and only the most complete questionnaire in the group was retained in the final database. Record selection is discussed in Section 3.C.

4. Removal of Sensitive or Confidential Information

The file that MPR received from NRC contained sensitive information such as Social Security Number (SSN). Any confidential information was immediately removed from the file. Each beneficiary had already been given a generic ID (MPRID) substitute during sample selection, the MPRID was retained as a means to uniquely identify each individual.

5. Initial Frequencies

MPR computed frequencies for all fields in the original data file. These tabulations served as a reference for the file in its original form and allowed comparison to final frequencies from previous years, helping to pinpoint problem areas that needed cleaning and editing. MPR examined these frequencies and cross-tabulations, using the results to adapt and modify the cleaning and editing specifications as necessary.

6. Data Cleaning and Recoding of Variables

MPR's plan for data quality for each quarter is found in the 2000 Adult Coding Scheme. It contains detailed instructions for all editing procedures used to correct data inconsistencies and errors. The Coding Scheme tables are found in Appendix B. These tables outline in detail the approach for recoding self-reported fields, doing range checks, logic checks, and skip pattern checks to insure that responses are consistent throughout the questionnaire. The Coding Scheme tables specify all possible original responses and any recoding, also indicating if backward coding or forward coding was used. Every skip pattern is assigned a note number shown in the annotated questionnaire (Appendix A). This note number defines the flag (for example, the Note 5 flag is N5) that is set to indicate the pattern of the original responses and any recoding. Thus, if the value of N5 is 2, the reader can look at line 2 in the Note 5 table for the original and recoded response values.

The SAS program implementing the coding scheme is found in Appendix F.

a. **Check Self-Reported Fields**

Several survey questions seek information that can be verified with DEERS data and/or sampling variables. Nevertheless, in recoding these self-reported fields (such as sex, active duty status, and TRICARE enrollment) we used the questionnaire responses unless they were missing; in which case, we used the DEERS data. For example, if the question on the sex of the beneficiary was not answered, the recoded variable for self-reported sex was not considered missing but was given the DEERS value for gender. If there was any disagreement between questionnaire responses and DEERS data, the questionnaire response generally took precedence.

In many tables and charts in the reports, the DEERS information was used rather than the recoded self-reported information for active duty status and TRICARE enrollment.

b. **Skip Pattern Checks**

At several points in the survey, the respondent should skip certain questions. If the response pattern is inconsistent with the skip pattern, each response in the series will be checked to determine which are most accurate, given the answers to other questions. Questions that are appropriately skipped were set to the SAS missing value of 'N'. Inconsistent responses, such as answering questions that should be skipped or not answering questions that should be answered, were examined for patterns that could be resolved. Frequently, responses to subsequent questions provide the information needed to infer the response to a question that was left blank. The 2000 Adult Coding Scheme (see Appendix B) specifically addresses every skip pattern and shows the recoded values for variables within each pattern; we back coded and/or forward coded to ensure that all responses are consistent within a sequence.

c. **Range Checks**

MPR verified each response to ensure that values are within range. For example, if a response puts the day of the month at 35, we recoded the day of the month to indicate that it is "out of range." This out-of-range response code is a SAS missing value of 'O'.

d. **Missing Values**

NRC initially encoded any question with missing responses to a SAS missing value code of ‘.’. After verifying skip patterns, MPR recoded some of these responses to reflect valid skips (SAS missing value code of ‘.N’). The complete list of codes for types of missing values such as multiple responses, incomplete grids, and questions that should not have been answered is shown in Table 3.3.

Occasionally, missing questionnaire responses can be inferred by examining other responses. For example, if a respondent fails to answer Question 23 about getting advice or help over the phone from his/her doctor’s office or clinic, but goes on to answer how often he/she received help or advice, then we assume that the answer to Question 23 should have been “yes”. Using this technique, we recoded some missing questionnaire responses to legitimate responses.

e. **Multiple Response Errors**

If a respondent gives more than one answer to a question that should have only one answer, the response to that question was generally coded with a SAS missing value of ‘.A’. For certain questions, however, we used the greater or greatest value as the response. For example, if there was more than one response to the question about the highest education level obtained, we would deduce that the higher (or highest) level is the accurate response.

Using an approach similar to that used for missing values, we examined other questionnaire responses in an attempt to infer what the respondent intended for those questions with multiple marks. For example, if there are multiple responses to H00018 “In the last 12 months, did you call a doctor’s office or clinic *during regular office hours* to get help or advice *for yourself?*” and the response to H00019 indicates that the respondent usually got the medical advice they needed for themselves, we assume that the response to H00018 should have been “yes”.

f. **Logic Checks**

Most logic problems are due to inconsistent skip patterns, for example, when a male answers a question intended for women only. Other internal inconsistencies were resolved in the same manner as skip pattern inconsistencies — by looking at the answers to all related questions. For instance, several questions related to smoking were examined as a group to determine the most appropriate response pattern so that any inconsistent response could be reconciled to the other responses in the group.

7. **Quality Assurance**

MPR created an edit flag for each Coding Scheme table that indicates what, if any, edits were made in the cleaning and editing process. This logic was also used in previous years; variables such as N5 (see Appendix B) indicate exactly what pattern of the Coding Scheme was followed for a particular set of responses. These edit flags have a unique value for each set of original and recoded values, allowing us to match original values and recoded values for any particular sequence.

In order to validate the editing and cleaning process, MPR prepared cross-tabulations between the original variables and the recoded variables with the corresponding edit flag. This revealed any discrepancies that needed to be addressed. In addition, we compared unweighted frequencies of each variable with the frequencies from the original file to verify that each variable was accurately recoded. MPR reviewed these tabulations for each variable in the survey. If necessary, the earlier edit procedures were modified and the Coding Scheme program rerun. The resulting file was clean and ready for analysis.

C. RECORD SELECTION

To select final records, we first defined a code that classifies each sampled beneficiary as to his/her final response status. To determine this response status, we used postal delivery information provided by NRC for each sampled beneficiary. This information is contained in the FLAG_FIN variable which is described in Table 3.4

TABLE 3.4
FLAG_FIN VARIABLE FOR 2000 HCSDb

Value	Questionnaire Return Disposition	Reason/Explanation Given	Eligibility
1	Returned survey	Completed and returned	Eligible
2	Returned ineligible	Returned with at least one question marked and information that the beneficiary was ineligible	Ineligible
3	Returned blank	Information sent that beneficiary is temporarily ill or incapacitated	Eligible
4	Returned blank	Information sent that beneficiary is deceased	Ineligible
5	Returned blank	Information sent that beneficiary is incarcerated or permanently incapacitated	Ineligible
6	Returned blank	Information sent that beneficiary left military, or divorced after reference date, or retired	Eligible
7	Returned blank	Information sent that beneficiary was not eligible on 6/1/99	Ineligible
8	Returned blank	Blank form accompanied by reason for not participating	Eligible
9	Returned blank	No reason given	----
10	No return	Temporarily ill or incapacitated. Information came in by phone	Eligible
11	No return	Active refuser. Information came in by phone	Eligible
12	No return	Deceased. Information came in by phone	Ineligible
13	No return	Incarcerated or permanently incapacitated. Information came in by phone	Ineligible
14	No return	Left military or divorced after reference date, or retired. Information came in by phone	Eligible
15	No return	Not eligible on reference date. Information came in by phone	Ineligible
16	No return	Other eligible. Information came in by phone	Eligible
17	No return	No reason	---
18	PND	No address remaining	---
19	PND	Address remaining at the close of field	---
20	Original Non-Locatable	No address at start of mailing	---
21	No return or returned blank	Written documentation declining participation, no reason given	Eligible
22	No return or returned blank	Hospitalized but no indication if temporary or permanent	---

Using the above variables in Table 3.4, we classified all sampled beneficiaries into four groups:

- ✍ **Group 1:** Eligible, Questionnaire Returned. Beneficiaries who were eligible for the survey and returned a questionnaire with at least one question answered (FLAG_FIN = 1)
- ✍ **Group 2:** Eligible, Questionnaire Not Returned (or returned blank). Beneficiaries who did not complete a questionnaire but who were determined to be eligible for military health care by the reference date, that is, not deceased, not incarcerated, not permanently hospitalized (FLAG_FIN = 3, 6, 8, 10, 11, 14, 16, 21)
- ✍ **Group 3:** Ineligible Beneficiaries who were ineligible because of death, institutionalization, or no longer being in the MHS as of the reference date (FLAG_FIN = 2, 4, 5, 7, 12, 13, 15)
- ✍ **Group 4:** Eligibility Unknown. Beneficiaries who did not complete a questionnaire and for whom survey eligibility could not be determined (FLAG_FIN = 9, 17, 18, 19, 20, 22)

Group 1 was then divided into two subgroups according to the number of survey items completed (including legitimate skip responses):

- ✍ G1-1. Complete Questionnaire Returned
- ✍ G1-2. Incomplete Questionnaire Returned

G1-1 consists of eligible respondents who answered “enough” questions to be classified as having completed the questionnaire. G1-2 consists of eligible respondents who answered only a few questions. To determine if a questionnaire is complete, 29 key questions were chosen. These key questions were adapted from the complete questionnaire rule for the CAHPS 2.0. The key survey variables are: H00006, H00007, H00008, H00009, H00010, H00011, H00013, H00015, H00016, H00018, H00019, H00020, H00023, H00024, H00026, H00027, H00028, H00030, H00037, H00042, H00047, H00049, H00054, H00056, H00077, SREDA, H00079, SRRACE, and SRAGE. If fifteen or more of these key items are completed, then the questionnaire can be counted as complete.

Furthermore, we also subdivided Group 4 into the following:

- ✍ G4-1 for Locatable-blank return/no reason or no return/no reason (FLAG_FIN = 9, 17, 22)
- ✍ G4-2 for Nonlocatable-postal nondeliverable/no address, postal nondeliverable/had address, or original nonlocatable (FLAG_FIN = 18, 19, 20).

With this information, we can calculate the location rate (see Section 4.A).

With a code (FNSTATUS) for the final response/eligible status, we classified all sampled beneficiaries using the following values of FNSTATUS:

- ✍ 11 for G1-1
- ✍ 12 for G1-2
- ✍ 20 for Group 2
- ✍ 30 for Group 3
- ✍ 41 for G4-1
- ✍ 42 for G4-2

There were 453 duplicate questionnaires in Quarter I in the data set NRC delivered. All duplicates were classified into one of the above six groups. We then retained the one questionnaire for each beneficiary that had the most “valid” information for the usual record selection process. For

example, if two returned questionnaires from the same beneficiary have FNSTATUS code values of 11, 12, 20, 41, or 42, we retained the questionnaire with the smaller value. However, if one of a pair of questionnaires belongs to Group 3 (FNSTATUS = 3, i.e., ineligible), then we regarded the questionnaire as being ineligible.

Only beneficiaries with FNSTATUS = 11 were retained. All other records were dropped. In Quarter I, we retained 15,136 respondents. In Quarter II, 16,149 beneficiaries completed and returned the questionnaire. In Quarter III, 15,634 respondents were retained from the survey. In the fourth quarter, 14,888 eligible respondents were retained from the survey.

D. CONSTRUCTED VARIABLES

One of the most important aspects of database development is the formation of constructed variables and scale variables to support analysis. Constructed variables are formed when no single question in the survey defines the construct of interest. In Table 3.1 there is a list of all constructed variables for 2000 along with the page reference where complete descriptions are found. Each constructed variable is discussed in this section and the relevant piece of SAS code is shown. All SAS programs can be found in Appendix F.

1. Demographic Variables

a. Region (XREGION)

Catchment area codes (CACSMPL) are used to classify beneficiaries into specific regions. The XREGION variable partitions all catchment areas into non-overlapped regions so that we can report catchment-level estimates in the catchment reports. The regions are defined as follows:

- 1 = Northeast
- 2 = Mid-Atlantic
- 3 = Southeast
- 4 = GulfSouth
- 5 = Heartland
- 6 = Southwest
- 7,8 = Central
- 9 = Southern California
- 10 = Golden Gate
- 11 = Northwest
- 12 = Hawaii
- 13 = Europe
- 14 = Western Pacific Command (Asia)
- 15 = TRICARE Latin America
- 16 = Alaska
- . = Unassigned (CACSMPL = 9999)

For the purposes of our analysis, Region 7 and Region 8 were combined.

```

      .
      .
      .
      .
      .
/* XREGION -HEALTH CARE REGIONS */

```

```

IF CACSMPL IN ('0035', '0036', '0037', '0066', '0067', '0068', '0069', '0081', '0086', '0100',
               '0123', '0306', '0310', '0321', '0326', '0330', '0385', '0413', '9901')
    THEN XREGION= 1;
ELSE IF CACSMPL IN ('0089', '0090', '0091', '0092', '0120', '0121', '0122', '0124', '0335',
                   '0432', '0433', '0378', '0387', '0508', '7143', '7286', '7294', '9902')
    THEN XREGION= 2;
ELSE IF CACSMPL IN ('0039', '0041', '0045', '0046', '0047', '0048', '0049', '0050', '0051',
                   '0101', '0103', '0104', '0105', '0337', '0356', '0422', '0511', '9903')
    THEN XREGION= 3;
ELSE IF CACSMPL IN ('0001', '0002', '0003', '0004', '0038', '0042', '0043', '0073', '0074',
                   '0107', '0297', '7139', '9904')
    THEN XREGION= 4;
ELSE IF CACSMPL IN ('0055', '0056', '0060', '0061', '0095', '9905')
    THEN XREGION= 5;
ELSE IF CACSMPL IN ('0013', '0062', '0064', '0096', '0097', '0098', '0109', '0110', '0112',
                   '0113', '0114', '0117', '0118', '0338', '0363', '0364', '0365', '0366', '1587', '1592',
                   '7236', '9906')
    THEN XREGION= 6;
ELSE IF CACSMPL IN ('0008', '0009', '0010', '0079', '0083', '0084', '0085', '0108', '9907')
    THEN XREGION= 7;
ELSE IF CACSMPL IN ('0031', '0032', '0033', '0053', '0057', '0058', '0059', '0075', '0076',
                   '0077', '0078', '0093', '0094', '0106', '0119', '0129', '0252', '7200', '7293', '9908')
    THEN XREGION= 8;
ELSE IF CACSMPL IN ('0018', '0019', '0024', '0026', '0029', '0030', '0131', '0213', '0248', '5205',
                   '9909')
    THEN XREGION= 9;
ELSE IF CACSMPL IN ('0014', '0015', '0028', '0235', '0250', '9910')
    THEN XREGION=10;
ELSE IF CACSMPL IN ('0125', '0126', '0127', '0128', '0395', '1646', '9911')
    THEN XREGION=11;
ELSE IF CACSMPL IN ('0052', '0280', '0287', '0534', '7043', '9912')
    THEN XREGION=12;
ELSE IF CACSMPL IN ('0606', '0607', '0609', '0617', '0618', '0623', '0624', '0629', '0633',
                   '0635', '0653', '0805', '0806', '0808', '0814', '8931', '8982', '9913')
    THEN XREGION=13;
ELSE IF CACSMPL IN ('0610', '0612', '0620', '0621', '0622', '0637', '0638', '0639', '0640',
                   '0802', '0804', '0853', '0862', '9914')
    THEN XREGION=14;
ELSE IF CACSMPL IN ('0449', '0613', '0615', '0616', '9915')
    THEN XREGION=15;
ELSE IF CACSMPL IN ('0005', '0006', '0203', '9916')
    THEN XREGION=16;
ELSE IF CACSMPL = 9999
    THEN XREGION= .;

```

b. Continental United States (CONUS)

XREGION is used to classify beneficiaries either in the continental United States (CONUS) or overseas (OCONUS).

Assign indicator of CONUS based on XREGION. CONUS stands for

Conten[•]tial United States but it includes both Alaska and Hawaii.
•

•
IF XREGION IN (1,2,3,4,5,6,7,8,9,10,11,12,16) THEN CONUS=1;
ELSE IF XREGION IN (13,14,15) THEN CONUS=0;
ELSE IF XREGION = . THEN CONUS=.;

c. Out of Catchment Area (OUTCATCH)

CACSMPL is used to classify beneficiaries either in a catchment area or outside a catchment area.

Assign indicator of OUTCATCH based on CACSMPL.

```
IF CACSMPL > 9900 THEN OUTCATCH=1; /* Out of catchment area */  
ELSE OUTCATCH=0; /* Catchment area */
```

d. Gender of Beneficiary (XSEXA)

XSEXA is constructed using self reported sex, gender identified on the DEERS database, and answers to gender specific questions.

/** Note 23 - gender H00070, SEX, H00071, H00072--H00076B, XSEXA */

/* 1/21/98 use SRSEX & responses to gender specific questions
if there is discrepancy between SRSEX and SEX */
/* set imputed MALE, FEMALE based on gender specific questions */

```
IF H00071 > 0 THEN MALE=1; /* prostate */  
ELSE MALE = 0;  
IF H00072>0 OR H00073A>0 OR H00073B>0 OR H00074>0 OR H00075>0  
OR H00076A>0 OR H00076B>0 THEN FEMALE=1; /* mammogram/pap  
smear/PREGNANT*/  
ELSE FEMALE = 0;  
IF H00070=. OR H00070=.A THEN DO;  
IF (SEX='F' AND MALE AND FEMALE) THEN DO;  
N23A=1;  
XSEXA=2;  
END;  
ELSE IF (SEX='F' AND MALE=0 AND FEMALE=0) THEN DO;  
N23A=2;  
XSEXA=2;  
END;  
ELSE IF (SEX='M' AND MALE AND FEMALE) THEN DO;  
N23A=3;  
XSEXA=1;  
END;  
ELSE IF (SEX='M' AND MALE=0 AND FEMALE=0) THEN DO;  
N23A=4;  
XSEXA=1;  
END;  
ELSE IF MALE AND NOT FEMALE THEN DO;  
N23A=5;  
XSEXA=1;  
END;  
ELSE IF FEMALE AND NOT MALE THEN DO;  
N23A=6;  
XSEXA=2;
```

```

END;
ELSE IF (SEX='Z' AND MALE AND FMALE) THEN DO;
  N23A=7;
  XSEX=.;
END;
ELSE IF (SEX='Z' AND MALE=0 AND FMALE=0) THEN DO;
  N23A=8;
  XSEX=.;
END;
END;
ELSE IF (H00070=1) THEN DO;
  IF MALE AND NOT FMALE THEN DO;
    N23A=9;
    XSEX=1;
  END;
  ELSE IF NOT MALE AND FMALE THEN DO;
    IF SEX='F' THEN DO;
      N23A=10;
      XSEX=2;
    END;
    ELSE DO;
      N23A=11;
      XSEX=1;
    END;
  END;
END;
ELSE IF MALE AND FMALE THEN DO;
  N23A=12;
  XSEX=1;
END;
ELSE IF MALE=0 AND FMALE=0 THEN DO;
  N23A=13;
  XSEX=1;
END;
END;
ELSE IF (H00070=2) THEN DO;
  IF NOT MALE AND FMALE THEN DO;
    N23A=14;
    XSEX=2;
  END;
  ELSE IF MALE AND NOT FMALE THEN DO;
    IF SEX='M' THEN DO;
      N23A=15;
      XSEX=1;
    END;
    ELSE DO;
      N23A=16;
      XSEX=2;
    END;
  END;
END;
ELSE IF MALE AND FMALE THEN DO;
  N23A=17;
  XSEX=2;
END;
ELSE IF MALE=0 AND FMALE=0 THEN DO;
  N23A=18;
  XSEX=2;
END;

```

END;

/* Note 23b - gender vs prostate */

```

IF XSEXA=1 THEN N23B=1; /* male */
ELSE IF XSEXA=2 THEN DO; /* female */
  IF H00071 NE . THEN DO;
    N23B=2;
    H00071=.C;
  END; /*inconsistent resp*/
ELSE DO;
  N23B=3;
  H00071=.N;
END; /* valid skip */
END;
ELSE IF XSEXA=. THEN DO; /* missing sex */
  N23B=4;
  H00071=.;
END;

```

/* Note 23c - gender vs mammogram/paps */

/* REDEFINE FMALE TO LOOK ONLY AT MAMMOGRAM OR PAP SMEAR
ENTRIES */

ARRAY NOT23C H00072 H00073A H00073B H00074 H00075 H00076A H00076B;

```

IF H00072 NE . OR H00073A NE . OR H00073B NE . OR H00074 NE . OR
  H00075 NE . OR H00076A NE . OR H00076B NE . THEN FMALE=1; /*
  mammogram or pap smear */
ELSE FMALE = 0;
IF XSEXA=1 THEN DO; /* male */
  IF FMALE=0 THEN DO;
    N23C=1;
    DO OVER NOT23C;
    IF NOT23C=. THEN NOT23C = .N;
    ELSE NOT23C=.C;
  END;
END; /* inconsistent response */
ELSE IF FMALE=1 THEN DO;
  N23C=2;
  DO OVER NOT23C;
  NOT23C=.N;
END;
END; /* valid skip */
END;
ELSE IF XSEXA=2 THEN N23C=3; /* female */
ELSE IF XSEXA=. THEN DO; /* missing sex */
  N23C=4;
  DO OVER NOT23C;
  NOT23C=.;
END;
END;

```

e. **Beneficiary Group (XBNFGRP)**

We redefined beneficiary groups to exclude active duty personnel and active duty family members who are age 65 or older. The variable XBNFGRP reconstructs beneficiary groups into the following values:

- 1 = Active Duty, under 65
- 2 = Family members of active duty, under 65
- 3 = Retirees, survivors, and family members, under 65
- 4 = Retirees, survivors, and family members, 65 or over
- . = Unknown/other

```

/* XBNFGRP-Beneficiary Group that excludes those 65 and over-Active Duty
   and Family Members of Active Duty */
IF FIELDAGE >= 65 AND ENBGSMPL IN (1, 2, 3, 4) THEN XBNFGRP = .;
ELSE IF ENBGSMPL = 1 THEN
DO;
  IF (XSEXA = 2 AND SEXSMPL = 1) OR
  (XSEXA = 1 AND SEXSMPL = 2 ) THEN XBNFGRP = 2;
  ELSE XBNFGRP = 1;
END;
ELSE IF ENBGSMPL IN (2, 3, 4) THEN XBNFGRP = 2;
ELSE IF ENBGSMPL IN (5, 6, 7) THEN XBNFGRP = 3;
ELSE IF ENBGSMPL IN (8, 9, 10) THEN XBNFGRP = 4;

```

2. **TRICARE Prime Enrollment and Insurance Coverage**

a. **TRICARE Prime Enrollment Status (XENRLLMT)**

For reporting purposes, a person is considered enrolled in TRICARE Prime if they are under 65 and the poststratification enrollment type (ENBGSMPL), based on DEERS data, indicates that they were enrolled at the time of data collection. Because it is important to view the experiences of active duty personnel separately from other enrollees, there is a separate category for active duty (under 65) — they are automatically enrolled in Prime. The five categories for TRICARE Prime enrollment are as follows:

- 1 = Active duty, under 65
- 2 = Other enrollees, under 65
- 3 = Not enrolled in TRICARE Prime, under 65
- 4 = Not enrolled in TRICARE Prime, 65 or over
- 5 = Enrolled in TRICARE Prime, 65 or over
- . = Unknown

```

/* XENRLLMT--ENROLLMENT STATUS */

```

```
IF 18 <= FIELDAGE < 65 THEN DO;
  IF ENBGSMPL = 1 THEN XENRLLMT = 1;          /* Active duty (<65) */
  ELSE IF ENBGSMPL IN (2, 3, 5, 6) THEN XENRLLMT = 2; /* Non-active duty enrolled (<65) */
  ELSE IF ENBGSMPL IN (4, 7) THEN XENRLLMT = 3; /* Not Enrolled (<65) */
END;
ELSE IF FIELDAGE >= 65 THEN DO;
  IF ENBGSMPL = 10 THEN XENRLLMT = 4;          /* Not Enrolled (65+) */
  IF ENBGSMPL IN (8, 9) THEN XENRLLMT = 5;      /* Enrolled (65+) */
END;
```

b. TRICARE Prime Enrollment Status by Primary Care Manager (XENR_PCM)

This variable, similar to the previous variable XENRLLMT, separates the 'other enrollees' category into those with a military primary care manager (PCM) and those with a civilian PCM. Active duty personnel are automatically enrolled and always have a military PCM. XENR_PCM has six possible values:

1 = Active duty, under 65, military PCM

2 = Other enrollees, under 65, military PCM

3 = Other enrollees, under 65, civilian PCM

4 = Not enrolled in TRICARE Prime, under 65

5 = Not enrolled in TRICARE Prime, 65 or over

6 = Enrolled in TRICARE Prime, 65 or over, military PCM

7 = Enrolled in TRICARE Prime, 65 or over, civilian PCM

. = Unknown

/* XENR_PCM--ENROLLMENT BY PCM TYPE */

```
IF 18 <= FIELDAGE < 65 THEN DO;
  IF ENBGSMPL = 1 THEN XENR_PCM = 1;          /* Active duty (<65) */
  ELSE IF ENBGSMPL IN (3, 6) THEN XENR_PCM = 2; /* Enrolled (<65) - mil PCM */
  ELSE IF ENBGSMPL IN (2, 5) THEN XENR_PCM = 3; /* Enrolled (<65) - civ PCM */
  ELSE IF ENBGSMPL IN (4, 7) THEN XENR_PCM = 4; /* Not Enrolled (<65) */
END;
ELSE IF FIELDAGE >= 65 THEN DO;
  IF ENBGSMPL = 10 THEN XENR_PCM = 5;          /* Not Enrolled (65+) */
  IF ENBGSMPL = 9 THEN XENR_PCM = 6;          /* Enrolled (65+)-mil PCM */
  IF ENBGSMPL = 8 THEN XENR_PCM = 7;          /* Enrolled (65+)-civ PCM */
END;
```

c. TRICARE Prime Enrollment Status by PCM from Questionnaire Responses (XQENROLL)

The variable XQENROLL is analogous to the previous variable XENR_PCM but rather than using the DEERS information to determine enrollment, the responses to questions 14 and 15 are used to determine the status of the respondent according to the following categories:

1 = Active duty, under 65, military PCM

2 = Other enrollees, under 65, military PCM

3 = Other enrollees, under 65, civilian PCM
 4 = Not enrolled in TRICARE Prime, under 65
 5 = Not enrolled in TRICARE Prime, 65 or over
 . = Unknown

If a respondent is unsure about their PCM, a default value comes from the poststratification variable (ENBGSMPL).

```
/* XQENROLL--ENROLLMENT ACCORDING TO QUESTIONNAIRE RESPONSES AND */
/* USING DEERS SAMPLING VALUES */
IF ENBGSMPL = 1 AND 18 <= FIELDAGE < 65 THEN XQENROLL = 1; /* Active Duty (<65)*/

ELSE IF 18 <= FIELDAGE < 65 AND H00010 = 1 THEN DO;
  IF H00011 = 1 THEN XQENROLL = 2; /* Enrolled (<65) - mil PCM */
  ELSE IF H00011 = 2 THEN XQENROLL = 3; /* Enrolled (<65) - civ PCM */

  ELSE IF H00011 = 3 THEN DO;
    IF ENBGSMPL IN (3, 6) THEN XQENROLL = 2; /* Enrolled (<65) - Mil PCM */
    ELSE IF ENBGSMPL IN (2, 5) THEN XQENROLL = 3; /* Enrolled (<65) - Civ PCM */
  END;
END;
ELSE IF H00010 NE 1 THEN DO;
  IF 18 <= FIELDAGE < 65 THEN XQENROLL = 4; /* Not enrolled (<65) */
  ELSE IF FIELDAGE >= 65 THEN XQENROLL = 5; /* Not enrolled (>=65) */
END;
```

d. Most-Used Health Plan (XINS_COV)

The respondent's most-used health plan comes directly from Question 1 (unless the respondent is active duty) and the respondent's age. All active duty personnel are automatically enrolled in Prime. The six categories for this variable are as follows:

1 = Active duty, under 65
 2 = Other TRICARE Prime enrollees, under 65
 3 = TRICARE Standard/Extra (CHAMPUS)
 4 = Medicare Part A and/or Part B
 5 = Other civilian health insurance or civilian HMO
 6 = Prime, 65 or over
 . = Unknown

```
/* XINS_COV--INSURANCE COVERAGE */
IF XENRLLMT = 1 THEN XINS_COV = 1; /* Prime <65-Active Duty */
ELSE IF 18 <= FIELDAGE < 65 AND H00001 IN (1,2) THEN XINS_COV = 2; /* Prime <65-Non-active
Duty */
ELSE IF H00001 = 3 THEN XINS_COV = 3; /* Standard/Extra */
```

```

ELSE IF H00001 = 4 THEN XINS_COV = 4;          /* Medicare A or B */
ELSE IF H00001 IN (5, 6, 7, 8, 9) THEN XINS_COV = 5; /* Other civilian health insurance */
ELSE IF FIELDAGE >= 65 THEN DO;
  IF XENRLLMT = 5 AND H00001 IN (1,2) THEN XINS_COV=6; /* Prime, >= 65 */
END;

```

e. Types of Coverage (KCIVINS, KMEDIGAP)

Two binary variables were created to indicate the types of insurance that respondents use:

- ☒ Is the respondent covered by Civilian insurance (KCIVINS)
- ☒ Is the respondent covered by Medigap (KMEDIGAP)

These variables have the following values:

1 = Yes

2 = No

. = Unknown

```

/* KCIVINS--IS BENEFICIARY COVERED BY CIVILIAN INSURANCE */
IF H00003G=1 OR H00003I=1 OR H00003J=1 THEN KCIVINS=1; /* YES */
ELSE KCIVINS=2; /* NO */

```

```

/* KMEDIGAP--IS BENEFICIARY COVERED BY MEDIGAP */
IF H00003F=1 THEN KMEDIGAP=1; /* YES */
ELSE KMEDIGAP=2; /* NO */

```

f. Out-of-Pocket Costs (KCost_2)

A binary variable (KCost_2) was created to indicate those respondents whose out-of-pocket costs for medical care and medical insurance was over \$500.

1 = Out-of-pocket costs over \$500

2 = Out-of-pocket costs not over \$500

. = Out-of-pocket costs unknown

```

/* KCost_2--OUT OF POCKET COSTS FOR OFFICE VISITS GREATER THAN $500 */
IF H00059 IN (3, 4, 5) THEN KCost_2 = 1; /* YES */
ELSE IF H00059 IN (1, 2) THEN KCost_2=2; /* NO */

```

3. Satisfaction Measures

a. Enrollment Intentions (KENRINTN, KDISENRL)

Active duty personnel are not asked the questions on enrollment intentions. If a non-active duty respondent is not currently enrolled in TRICARE Prime, he or she is asked about his or her intention to enroll (Question 72). Similarly, if a non-active duty respondent is enrolled in TRICARE Prime, he or she is asked about the likelihood of disenrolling (Question 71). A binary variable is created to group the responses to the enrollment questions into these categories:

1 = response of likely or very likely

2 = all other valid responses

. = missing response

/* KENRINTN--INTENTION TO ENROLL */

IF H00058 IN (4, 5) THEN KENRINTN = 1; /* Yes */
ELSE IF H00058 IN (1, 2, 3, -5) THEN KENRINTN = 2; /* No */

/* KDISENRL--INTENTION TO DISNEROLL */

IF H00057 IN (4, 5) THEN KDISENRL = 1; /* Yes */
ELSE IF H00057 IN (1, 2, 3, -5) THEN KDISENRL = 2; /* No */

4. Access to Care (KMILOFFC, KCIVOFFC, KBGPRB1, KBGPRB2)

Some of the survey questions on access relate to a TRICARE performance standard. For these questions, we constructed binary variables, separately for beneficiaries using military and civilian facilities, to approximate the TRICARE standard. Table 3.5 presents those standards that were analyzed in the reports. The new variables have the following values:

1 = Standard was met

2 = Standard was not met

= Missing information

TABLE 3.5

TRICARE STANDARDS FOR ACCESS

Access Measure	TRICARE Standard	Variable Name	Relevant Question
Waiting Room Wait	Within 15 minutes	KMILOFFC, KCIVOFFC	35

/* KMILOFFC--OFFICE WAIT OF 15 MINUTES OR MORE AT MILITARY FACILITIES
KCIVOFFC--OFFICE WAIT OF 15 MINUTES OR MORE AT CIVILIAN FACILITIES */

IF H00042 = 1 THEN DO; /* Military */
IF H00030 IN (3,4) THEN KMILOFFC = 1; /* Yes */
ELSE IF H00030 IN (1,2) THEN KMILOFFC = 2; /* No */
END;
ELSE IF H00042 IN (2, 3, 4) THEN DO; /* Civilian */
IF H00030 IN (3,4) THEN KCIVOFFC = 1; /* Yes */
ELSE IF H00030 IN (1,2) THEN KCIVOFFC = 2; /* No */
END;

Question 18 asks how much of a problem, if any, it was to get a referral to a specialist. The responses to this question are regrouped by a binary variable KBGPRB1. KBGPRB1 looks at these two categories:

1 = Those who reported a "big problem"

2 = Those who reported not a "big problem"

. = Missing response

/* KBGPRB1--BIG PROBLEM GETTING REFERRALS TO SPECIALISTS */


```

IF H00014 = 1 THEN KBGPRB1 = 1;          /* YES */
ELSE IF H00014 IN (2,3) THEN KBGPRB1 = 2; /* NO  */

```

Similarly, variable KBGPRB2 was constructed. Question 33 asks about how much of a problem, if any, it was to get the care you or a doctor believed necessary. The responses to this question are regrouped by a binary variable KBGPRB2. KBGPRB2 looks at these two categories:

1 = Those who reported a "big problem"

2 = Those who reported not a "big problem"

. = Missing response

```

/* KBGPRB2--BIG PROBLEM GETTING NECESSARY CARE */
IF H00028 = 1 THEN KBGPRB2 = 1;          /* YES */
ELSE IF H00028 IN (2,3) THEN KBGPRB2 = 2; /* NO  */

```

5. Health Status (SF8PF, SF8RP, SF8BP, SF8GH, SF8VT, SF8SF, SF8RE, SF8MH PCS_8, MCS_8, KMID_H, KMID_MH)

Results for the health status are reported in summary measure format using the system provided in the manual "SF-8: How to Score the SF-8 Physical and Mental Health Summary Scales" (Ware, Kosinski, and Keller 1995). The SF-8 scale is based on a battery of questions developed by the Medical Outcomes Trust. The summary scales measure, physical and mental health components and eight health subscales including physical functioning, role-physical, bodily-pain, general health, vitality, social functioning, role-emotional and mental health.

/* Physical Functioning - SF8PF */

```

IF S00S02=5 THEN SF8PF=21.46;
ELSE IF S00S02=4 THEN SF8PF=30.31;
ELSE IF S00S02=3 THEN SF8PF=40.07;
ELSE IF S00S02=2 THEN SF8PF=48.33;
ELSE IF S00S02=1 THEN SF8PF=54.05;
ELSE SF8PF=.;

```

/* Role Physical - SF8RP */

```

IF S00S03=5 THEN SF8RP=23.01;
ELSE IF S00S03=4 THEN SF8RP=28.32;
ELSE IF S00S03=3 THEN SF8RP=38.71;
ELSE IF S00S03=2 THEN SF8RP=46.92;
ELSE IF S00S03=1 THEN SF8RP=53.98;
ELSE SF8RP=.;

```

/* Bodily Pain - SF8BP */

```

IF S00S04=6 THEN SF8BP=25.45;
ELSE IF S00S04=5 THEN SF8BP=31.48;
ELSE IF S00S04=4 THEN SF8BP=40.07;
ELSE IF S00S04=3 THEN SF8BP=47.67;
ELSE IF S00S04=2 THEN SF8BP=53.35;
ELSE IF S00S04=1 THEN SF8BP=60.77;
ELSE SF8BP=.;

```

/* General Health - SF8GH */

```
IF S00S01=6 THEN SF8GH=22.81;
ELSE IF S00S01=5 THEN SF8GH=32.56;
ELSE IF S00S01=4 THEN SF8GH=38.41;
ELSE IF S00S01=3 THEN SF8GH=46.43;
ELSE IF S00S01=2 THEN SF8GH=52.83;
ELSE IF S00S01=1 THEN SF8GH=59.45;
ELSE SF8GH=.;
```

/* Vitality - SF8VT */

```
IF S00S05=5 THEN SF8VT=28.14;
ELSE IF S00S05=4 THEN SF8VT=35.81;
ELSE IF S00S05=3 THEN SF8VT=45.16;
ELSE IF S00S05=2 THEN SF8VT=55.62;
ELSE IF S00S05=1 THEN SF8VT=61.83;
ELSE SF8VT=.;
```

/* Social Functioning - SF8SF */

```
IF S00S06=5 THEN SF8SF=23.44;
ELSE IF S00S06=4 THEN SF8SF=29.53;
ELSE IF S00S06=3 THEN SF8SF=40.41;
ELSE IF S00S06=2 THEN SF8SF=49.47;
ELSE IF S00S06=1 THEN SF8SF=55.25;
ELSE SF8SF=.;
```

/* Role Emotional - SF8RE */

```
IF S00S08=5 THEN SF8RE=21.66;
ELSE IF S00S08=4 THEN SF8RE=29.25;
ELSE IF S00S08=3 THEN SF8RE=38.09;
ELSE IF S00S08=2 THEN SF8RE=45.66;
ELSE IF S00S08=1 THEN SF8RE=52.42;
ELSE SF8RE=.;
```

/* Mental Health - SF8MH */

```
IF S00S07=5 THEN SF8MH=21.40;
ELSE IF S00S07=4 THEN SF8MH=31.62;
ELSE IF S00S07=3 THEN SF8MH=41.53;
ELSE IF S00S07=2 THEN SF8MH=49.59;
ELSE IF S00S07=1 THEN SF8MH=56.79;
ELSE S00S07=.;
```

The final equations to create the physical health and mental health summary scores are listed below. The equations show the weighting and aggregation of indicator variables.

$$PCS_8 = (0.30544 * SF8PF) + (0.49395 * SF8RP) + (0.33962 * SF8BP) + (0.20007 * SF8GH) + (0.10304 * SF8VT) + (0.01253 * SF8SF) + (0.03484 * SF8RE) + (-0.29206 * SF8MH) + (-9.36839);$$

$$MCS_8 = (-0.19183 * SF8PF) + (-0.17030 * SF8RP) + (-0.02507 * SF8BP) + (0.03625 * SF8GH) + (0.25699 * SF8VT) + (0.21312 * SF8SF) + (0.37965 * SF8RE) + (0.71838 * SF8MH) + (-10.11675);$$

Many of the reports show the percentage of respondents whose health status measures fall below the national median after adjustments for age and gender (KMID_H, KMID_MH). These are binary variables where a value of 1 indicates that the condition is true and a values of 2 indicates that the condition is false.

IF (FIELDAGE < 18 OR XSEXA < 0 OR PCS_8 = .) THEN KMID_H=.;

/* BELOW MEDIAN PHYSICAL HEALTH - MALES */

```
ELSE IF (18 <= FIELDAGE <= 24 AND XSEXA = 1 AND PCS_8 < 54.69) THEN KMID_H=1;
ELSE IF (25 <= FIELDAGE <= 29 AND XSEXA = 1 AND PCS_8 < 54.41) THEN KMID_H=1;
ELSE IF (30 <= FIELDAGE <= 34 AND XSEXA = 1 AND PCS_8 < 53.32) THEN KMID_H=1;
ELSE IF (35 <= FIELDAGE <= 39 AND XSEXA = 1 AND PCS_8 < 53.71) THEN KMID_H=1;
ELSE IF (40 <= FIELDAGE <= 44 AND XSEXA = 1 AND PCS_8 < 53.32) THEN KMID_H=1;
ELSE IF (45 <= FIELDAGE <= 49 AND XSEXA = 1 AND PCS_8 < 51.89) THEN KMID_H=1;
ELSE IF (50 <= FIELDAGE <= 54 AND XSEXA = 1 AND PCS_8 < 51.33) THEN KMID_H=1;
ELSE IF (55 <= FIELDAGE <= 59 AND XSEXA = 1 AND PCS_8 < 52.02) THEN KMID_H=1;
ELSE IF (60 <= FIELDAGE <= 64 AND XSEXA = 1 AND PCS_8 < 51.74) THEN KMID_H=1;
ELSE IF (65 <= FIELDAGE <= 69 AND XSEXA = 1 AND PCS_8 < 50.81) THEN KMID_H=1;
ELSE IF (70 <= FIELDAGE <= 74 AND XSEXA = 1 AND PCS_8 < 51.00) THEN KMID_H=1;
ELSE IF (FIELDAGE >= 75 AND XSEXA = 1 AND PCS_8 < 48.74) THEN KMID_H=1;
```

/* BELOW MEDIAN PHYSICAL HEALTH - FEMALES */

```
ELSE IF (18 <= FIELDAGE <= 24 AND XSEXA = 2 AND PCS_8 < 52.28) THEN KMID_H=1;
ELSE IF (25 <= FIELDAGE <= 29 AND XSEXA = 2 AND PCS_8 < 52.47) THEN KMID_H=1;
ELSE IF (30 <= FIELDAGE <= 34 AND XSEXA = 2 AND PCS_8 < 51.73) THEN KMID_H=1;
ELSE IF (35 <= FIELDAGE <= 39 AND XSEXA = 2 AND PCS_8 < 51.96) THEN KMID_H=1;
ELSE IF (40 <= FIELDAGE <= 44 AND XSEXA = 2 AND PCS_8 < 51.25) THEN KMID_H=1;
ELSE IF (45 <= FIELDAGE <= 49 AND XSEXA = 2 AND PCS_8 < 49.22) THEN KMID_H=1;
ELSE IF (50 <= FIELDAGE <= 54 AND XSEXA = 2 AND PCS_8 < 49.16) THEN KMID_H=1;
ELSE IF (55 <= FIELDAGE <= 59 AND XSEXA = 2 AND PCS_8 < 49.92) THEN KMID_H=1;
ELSE IF (60 <= FIELDAGE <= 64 AND XSEXA = 2 AND PCS_8 < 49.82) THEN KMID_H=1;
ELSE IF (65 <= FIELDAGE <= 69 AND XSEXA = 2 AND PCS_8 < 49.37) THEN KMID_H=1;
ELSE IF (70 <= FIELDAGE <= 74 AND XSEXA = 2 AND PCS_8 < 49.31) THEN KMID_H=1;
ELSE IF (FIELDAGE >= 75 AND XSEXA = 2 AND PCS_8 < 45.60) THEN KMID_H=1;
```

/******

ELSE KMID_H=2;

IF (FIELDAGE < 18 OR XSEXA < 0 OR PCS_8 = .) THEN KMID_MH=.;

/* BELOW MEDIAN MENTAL HEALTH - MALES */

```
ELSE IF (18 <= FIELDAGE <= 24 AND XSEXA = 1 AND MCS_8 < 49.45) THEN KMID_MH=1;
ELSE IF (25 <= FIELDAGE <= 29 AND XSEXA = 1 AND MCS_8 < 50.22) THEN KMID_MH=1;
ELSE IF (30 <= FIELDAGE <= 34 AND XSEXA = 1 AND MCS_8 < 50.37) THEN KMID_MH=1;
ELSE IF (35 <= FIELDAGE <= 39 AND XSEXA = 1 AND MCS_8 < 52.45) THEN KMID_MH=1;
ELSE IF (40 <= FIELDAGE <= 44 AND XSEXA = 1 AND MCS_8 < 52.16) THEN KMID_MH=1;
ELSE IF (45 <= FIELDAGE <= 49 AND XSEXA = 1 AND MCS_8 < 52.16) THEN KMID_MH=1;
ELSE IF (50 <= FIELDAGE <= 54 AND XSEXA = 1 AND MCS_8 < 52.76) THEN KMID_MH=1;
ELSE IF (55 <= FIELDAGE <= 59 AND XSEXA = 1 AND MCS_8 < 53.72) THEN KMID_MH=1;
ELSE IF (60 <= FIELDAGE <= 64 AND XSEXA = 1 AND MCS_8 < 55.55) THEN KMID_MH=1;
ELSE IF (65 <= FIELDAGE <= 69 AND XSEXA = 1 AND MCS_8 < 55.63) THEN KMID_MH=1;
ELSE IF (70 <= FIELDAGE <= 74 AND XSEXA = 1 AND MCS_8 < 55.09) THEN KMID_MH=1;
ELSE IF (FIELDAGE >= 75 AND XSEXA = 1 AND MCS_8 < 54.76) THEN KMID_MH=1;
```

/* BELOW MEDIAN MENTAL HEALTH - FEMALES */

```
ELSE IF (18 <= FIELDAGE <= 24 AND XSEXA = 2 AND MCS_8 < 46.30) THEN KMID_MH=1;
ELSE IF (25 <= FIELDAGE <= 29 AND XSEXA = 2 AND MCS_8 < 47.35) THEN KMID_MH=1;
ELSE IF (30 <= FIELDAGE <= 34 AND XSEXA = 2 AND MCS_8 < 47.51) THEN KMID_MH=1;
ELSE IF (35 <= FIELDAGE <= 39 AND XSEXA = 2 AND MCS_8 < 48.86) THEN KMID_MH=1;
ELSE IF (40 <= FIELDAGE <= 44 AND XSEXA = 2 AND MCS_8 < 50.35) THEN KMID_MH=1;
ELSE IF (45 <= FIELDAGE <= 49 AND XSEXA = 2 AND MCS_8 < 48.88) THEN KMID_MH=1;
ELSE IF (50 <= FIELDAGE <= 54 AND XSEXA = 2 AND MCS_8 < 50.32) THEN KMID_MH=1;
```

```
ELSE IF (55 <= FIELDAGE <= 59 AND XSEXA = 2 AND MCS_8 < 52.16) THEN KMID_MH=1;
ELSE IF (60 <= FIELDAGE <= 64 AND XSEXA = 2 AND MCS_8 < 52.54) THEN KMID_MH=1;
ELSE IF (65 <= FIELDAGE <= 69 AND XSEXA = 2 AND MCS_8 < 53.41) THEN KMID_MH=1;
ELSE IF (70 <= FIELDAGE <= 74 AND XSEXA = 2 AND MCS_8 < 53.12) THEN KMID_MH=1;
ELSE IF (FIELDAGE >= 75 AND XSEXA = 2 AND MCS_8 < 55.22) THEN KMID_MH=1;
```

6. Preventive Care (KBRSTCR, HP_PRNTL, HP_MAMOG, HP_MAM50, HP_PAP, HP_BP, HP_FLU, HP_PROS, HP_GP, HP_CHOL, HP_SMOKE, HP_BRST)

As in some of the access analyses, preventive care analyses incorporated either a TRICARE standard or a federal Healthy People 2010 objective. We constructed new binary variables from the responses to indicate whether the respondent received the preventive care service within the recommended time period. See Table 3.8 for the list of the variables developed for analysis of preventive care; these variables will be compared to the TRICARE standard or Healthy People 2010 Goal. The new variables have the following values:

1 = Received service within the recommended time period

2 = Did not received service within the recommended time period

.= Missing information

```
/* KBRSTCR--WOMEN 40>=, EVER HAD MAMMOGRAM & EVER HAD BREAST EXAM */
```

```
IF XSEXA = 2 AND FIELDAGE >= 40 THEN DO;
```

```
IF (H00073B IN (5, 4, 3, 2) AND H00074 IN (5, 4, 3, 2)) THEN KBRSTCR = 1; /* Yes */
```

```
ELSE IF (H00073B = 1 OR H00074=1) THEN KBRSTCR = 2; /* No */
```

```
END;
```

```
/* HP_PRNTL--IF PREGNANT LAST YEAR, RECEIVED PRENATAL CARE IN 1ST TRIMESTER */
```

```
IF H00075 IN (1,2) THEN DO; /* Pregnant in last 12 months */
```

```
IF H00076B = 4 THEN HP_PRNTL = 1; /* Yes */
```

```
ELSE IF (H00076A = 1 AND H00076B = 1) THEN HP_PRNTL = .; /* <3 months pregnant now */
```

```
ELSE IF H00076B IN (1,2,3) THEN HP_PRNTL = 2; /* No */
```

```
END;
```

```
/* HP_MAMOG--FOR WOMEN AGE 40 AND OVER, HAD MAMMOGRAM W/IN PAST 2 YEARS */
```

```
IF XSEXA = 2 AND FIELDAGE >= 40 THEN DO;
```

```
IF H00073B IN (5, 4) THEN HP_MAMOG = 1; /* Yes */
```

```
ELSE IF H00073B IN (1, 2, 3) THEN HP_MAMOG = 2; /* No */
```

```
END;
```

```
/* HP_MAM50--FOR WOMEN AGE 50 AND OVER, HAD MAMMOGRAM W/IN PAST 2 YEARS */
```

```
IF XSEXA = 2 AND FIELDAGE >= 50 THEN DO;
```

```
IF H00073B IN (5, 4) THEN HP_MAM50 = 1; /* Yes */
```

```
ELSE IF H00073B IN (1, 2, 3) THEN HP_MAM50 = 2; /* No */
```

```
END;
```

```
/* HP_PAP--FOR ALL WOMEN, HAD PAP SMEAR IN LAST 3 YEARS */
```

```
IF XSEXA = 2 THEN DO;
```

```
IF H00072 IN (4, 5) THEN HP_PAP = 1; /* Yes */
```

```
ELSE IF H00072 IN (1, 2, 3) THEN HP_PAP = 2; /* No */
```

```
END;
```

```
/* HP_BP--HAD BLOOD PRESSURE SCREENING IN LAST 2 YEARS AND KNOW RESULT */
```

```

IF H00062 IN (2,3) AND H00063 = 1 THEN HP_BP = 1;    /* Yes */
ELSE IF H00062 = 1 THEN HP_BP = 2;                  /* No */
ELSE IF H00062 < 0 OR H00063 < 0 THEN HP_BP = .;    /* Unknown */
ELSE HP_BP = 2;                                      /* No */

/* HP_FLU--FOR PERSON AGE 65 OR OVER, HAD FLU SHOT IN LAST 12 MONTHS */
IF FIELDAGE >= 65 THEN DO;
  IF H00065 = 4 THEN HP_FLU = 1;                      /* Yes */
  ELSE IF H00065 IN (1, 2, 3) THEN HP_FLU = 2;      /* No */
END;

/* HP_PROS--FOR MEN AGE 50 AND OVER, HAD PROSTATE EXAM W/IN PAST 12 MONTHS */
IF XSEXA = 1 AND FIELDAGE >= 50 THEN DO;
  IF H00071 = 5 THEN HP_PROS = 1;                      /* Yes */
  ELSE IF H00071 IN (1, 2, 3, 4) THEN HP_PROS = 2;  /* No */
END;

/* HP_GP--EXCEPT WHEN SICK OR PREGNANT, GENERAL PHYSICAL EXAM W/IN PAST 12 MONTHS */
IF H00061 = 5 THEN HP_GP = 1;                      /* Yes */
ELSE IF H00061 IN (1, 2, 3, 4) THEN HP_GP = 2;      /* No */

/* HP_CHOL--HAD CHOLESTEROL SCREENING IN PAST 5 YEARS */
IF H00064 IN (3, 4, 5) THEN HP_CHOL = 1;          /* Yes */
ELSE IF H00064 IN (1, 2) THEN HP_CHOL = 2;        /* No */

/* HP_SMOKE--ADVISED TO QUIT SMOKING IN PAST 12 MONTHS */
IF H00069 IN (2, 3, 4, 5) THEN HP_SMOKE = 1;      /* Yes */
ELSE IF H00069 = 1 THEN HP_SMOKE = 2;            /* No */

/* HP_BRST--BREAST EXAM IN PAST 12 MONTHS */
IF XSEXA=2 AND FIELDAGE >= 40 THEN DO;
  IF H00074 = 5 THEN HP_BRST = 1;                      /* Yes */
  ELSE IF H00074 IN (1, 2, 3, 4) THEN HP_BRST = 2;  /* No */
END;

```

TABLE 3.6

PREVENTIVE CARE STANDARDS

2000 HEALTH CARE SURVEY OF DOD BENEFICIARIES

Preventive Care Delivered	Question Number – Q1	Variable Name	Received Service In Recommended Time Period (Numerator)	Population Involved (Denominator)	Standard
General Physical	75	HP_GP	Number with care in the past 12 months	Adults	None
Blood Pressure Check	76 & 77	HP_BP	Number with care in the past 24 months and know the results	Adults	95% within past 2 years
Cholesterol Screening	78	HP_CHOL	Number with care in the past 60 months	Adults	80% in the past 60 months
Flu Shot	79	HP_FLU	Number with care in the past 12 months	Adults age 65 and older	90% in past year, age 65 and over
Pap Smear	86	HP_PAP	Number with care in the past 36 months	Adult females	90% in the past 36 months
Mammography	88	HP_MAMOG	Number with care in the past 24 months	Females age 40 and over	70% in the past 24 months
Mammography	88	HP_MAM50	Number with care in the past 24 months	Females age 50 and over	60% in the past 24 months
Breast Exam	89	HP_BRST	Number with care in the past 12 months	Females age 40 and over	60% in the past 12 months
Prostate Exam	85	HP_PROS	Number with care in the past two years	Males age 50 and over	All males age 50 and over an annual exam and PSA blood test
Smoking Counseling	83	HP_SMOKE	Number with care in the past 12 months	All current adult smokers and those who quit smoking within the past year	75% in past year
Prenatal Care	92	HP_PRNTL	Number with care in the first trimester	Currently pregnant adult females and all adult females who were pregnant in the past 12 months, excluding those less than 3 months pregnant who haven't received care	90% had care in first trimester

7. Utilization

a. Outpatient Utilization (KMILOPQY, KCIVOPQY)

Question 32 contains the total outpatient visits. This is called KMILOPQY and adjusted to reflect zero visits for those with no care or those who get their care from civilian facilities or KCIVOPQY, after similar adjustments for no care at civilian facilities.

```
/* KMILOPQY--OUTPATIENT VISITS TO MILITARY FACILITY  
   KCIVOPQY--OUTPATIENT VISITS TO CIVILIAN FACILITY */  
IF H00042 = 1 THEN DO;  
    KMILOPQY=H00027;  
    KCIVOPQY=1;  
END;  
ELSE IF H00042 IN (2, 3, 4) THEN DO;  
    KCIVOPQY=H00027;  
    KMILOPQY=1;  
END;  
ELSE IF H00042 = 5 THEN DO;  
    KMILOPQY=1;  
    KCIVOPQY=1;  
END;
```

b. Use of Military Pharmacies to Fill Civilian Prescriptions (KPRSCPTN)

KPRSCPTN is a binary variable created to indicate if a respondent had six or more prescriptions that were written by a civilian provider but were filled by a military pharmacy.

```
/* KPRSCPTN--6 OR MORE CIVILIAN PRESCRIPTIONS FILLED BY MILITARY PHARMACY */  
IF H00041 IN (3,4,5) THEN KPRSCPTN = 1; /* YES */  
IF H00041 IN (1,2) THEN KPRSCPTN = 2; /* NO */
```

E. WEIGHTING PROCEDURES

Estimates based on the 2000 HCSDb must account for the survey's complex sample design and for the biasing effects that nonresponse can have. As a part of sample selection, MPR constructed sampling weights (BWT) that reflect the differential selection probabilities used to sample beneficiaries across strata. Nonresponse can also lead to distortions of the respondent sample with respect to the total population of DoD health care beneficiaries. Adjustments were made to these sampling weights, BWT, to compensate for such distortions, using a weighting class method. These adjusted weights were also adjusted through the poststratification procedure to form the analysis weights, which we included in the final deliverable database. We also generated replicate weights for the final database so that users have the option of obtaining variance estimates with a replication method as well as the Taylor series method. This section presents these weighting procedures for the 2000 Adult HCSDb.

1. Constructing the Sampling Weight

The sampling weight was constructed on the basis of the sample design. In the 2000 Adult HCSDb, stratified sampling was used to select the samples that would receive the questionnaire. Sampling was independently executed within strata defined by combinations of the three domains: enrollment status groups; beneficiary groups; and geographic areas.

The sample was selected with differential probabilities of selection across strata. Sample sizes were driven by predetermined precision requirements. For further details of the 2000 adult sample design, see Clusen and Jang (2000). Our first step in weighting was to construct sampling weights that reflect these unequal sampling rates. These sampling weights can be viewed as the number of population elements that each sampled beneficiary represents. The sampling weight was defined as the inverse of the beneficiary's selection probability or:

$$(1) \quad W_s(h, i) = \frac{N(h)}{n(h)}$$

where:

$W_s(h, i)$ is the sampling weight for the i -th sampled beneficiary within the h -th stratum,

$N(h)$ is the total number of beneficiaries in the h -th stratum, and

$n(h)$ is the number of sampled beneficiaries from stratum h .

The sum of the sampling weights over selections from the h -th stratum equals the total population size of the h -th stratum or $N(h)$.

2. Adjustment for Total Nonresponse

Survey estimates obtained from respondent data only can be biased with respect to describing characteristics of the total population (Lessler and Kalsbeek 1992). To reduce this bias, we developed procedures to deal with the problems caused by nonresponse. Two types of nonresponse were associated with the 2000 Adult HCSDb:

- ✍ Unit or total nonresponse occurs when a sampled beneficiary did not respond to the survey questionnaire (e.g., refusals, no questionnaire returned, blank questionnaire returned, bad address).
- ✍ Item nonresponse occurs when a question that should have been answered is not answered (e.g., refusal to answer, no response).

With high item response rates observed in previous surveys, statistical imputation was not used to compensate for item nonresponse in the 2000 Adult HCSDb. To account for total nonresponse, we implemented a weighting class adjustment followed by a poststratification adjustment.

3. Weighting Class Adjustment

Weighting class adjustments were made by partitioning the sample into groups, called *weighting classes*, and then adjusting the weights of respondents within each class so that they sum to the weight total for nonrespondents and respondents from that class. Implicit in the weighting class adjustment is the assumption that — had the nonrespondents responded — their responses would have been distributed in the same way as the responses of the other respondents in their class.

The 2000 Adult HCSDb weighting classes were defined on the basis of the stratification variables: TRICARE Prime enrollment status, beneficiary group, and geographic area.

Nonresponse adjustment factors for the 2000 Adult HCSDb were calculated in two steps. First, we adjusted the sampling weights to account for sampled beneficiaries for whom eligibility status could not be determined. Sampled beneficiaries were then grouped as follows according to their response status d :

$d=1$ Eligible — completed questionnaire returned (FNSTATUS = 11)

- $d=2$ Eligible — incomplete or no questionnaire returned (FNSTATUS = 12 or 20)
 $d=3$ Ineligible — deceased, incarcerated or permanently incapacitated beneficiary (FNSTATUS = 30)
 $d=4$ Eligibility unknown — no questionnaire or eligibility data (FNSTATUS = 41 or 42)

Within weighting class c , the weights of the $d=4$ nonrespondents with unknown eligibility were redistributed to the cases for which eligibility was known ($d=1,2,3$), using an adjustment factor $A_{wc1}(c,d)$ that was defined to be zero for $d=4$ and defined as:

$$(2) \quad A_{wc1}(c,d) = \frac{\sum_{i \in S(c)} W_s(c,i)}{\sum_{i \in S(c)} I_d(i) W_s(c,i)} \quad \text{for } d = 1, 2, 3$$

where:

$A_{wc1}(c,d)$ is the eligibility-status adjustment factor for weighting class c and response status code d ,

$I_d(i)$ is the indicator function that has a value of 1 if sampled unit i has a response status code of d and 0 otherwise,

$S(c)$ is the set of sample members belonging to weighting class c , and

$W_s(c,i)$ is the sampling weight (BWT) for the i -th sample beneficiary from weighting class c before adjustment.

The adjustment $A_{wc1}(c,d)$ was then applied to the sampling weights to obtain the eligibility-status adjusted weight. Beneficiaries in weighting class c with response status code of d were assigned the eligibility-status adjusted weight:

$$(3) \quad W_{wc1}(c,d,i) = A_{wc1}(c,d) W_s(c,i)$$

Note that since $d=4$ cases have adjustment factors of zero, they also have adjusted weights of zero.

The next step in weighting was to adjust for the loss of completed questionnaires from beneficiaries known to be eligible. For this adjustment, the weighting class c from the previous step was again partitioned into groups according to the beneficiary's response status code d . Within weighting class c , the weights of the $d=2$ nonresponding eligibles were redistributed to the responding eligibles $d=1$, using an adjustment factor $A_{wc2}(c,d)$ that was defined to be zero for $d=2,4$. For Group 1 ($d=1$), the questionnaire-completion adjustment or $A_{wc2}(c,1)$ factor for class c was computed as:

$$(4) \quad A_{wc2}(c,1) = \frac{\sum_{i \in S(c)} I_1(i) W_{wc1}(c,i)}{\sum_{i \in S(c)} I_1(i) W_{wc1}(c,i)}$$

By definition, all $d=3$ ineligible beneficiaries "respond," so the $d=3$ adjustment factor is 1, or $A_{wc2}(c,3)=1$. The questionnaire-completion adjusted weight was calculated as the product of the questionnaire-completion adjustment $A_{wc2}(c,d)$ and the previous eligibility-status adjusted weight $W_{wc1}(c,d,i)$, or:

$$(5) \quad W_{wc2}(c,d,i) = A_2(c,d) W_{wc1}(c,d,i)$$

As a result of this step, all nonrespondents ($d=2,4$) had questionnaire-completion adjusted weights of zero, while the weight for ineligible cases ($d=3$) remained unchanged, or $W_{wc2}(c,3,i)=W_{wc1}(c,3,i)$.

4. Poststratification for Quarters I and II

The 2000 HCSDb survey has the ideal sampling frame in that it has all beneficiaries eligible for the survey and population counts are available for all cells created by sampling variables. Because a stratified simple random sample design was used, the sum of the sampling weight (inverse of selection probability) within a sampling stratum is exactly the same as the frame count. A cell-based ratio adjustment is used for nonresponse adjustment with cells as one or groups of sampling strata. The weighted sum in each cell after nonresponse adjustment is same with the frame count accordingly. Because the way these adjustment cells are grouped closely relates to analytic domains, no further adjustment was initially planned to improve the bias or precision of estimates for analytic characteristics.

However, in Quarters 1 and 2 we observed a gender discrepancy between sampling information and survey responses, and we became suspicious that there would be substantial discrepancies between actual respondents and addressees (or sampled beneficiaries). Therefore we believe that beneficiary group and gender should be specified or confirmed based on survey responses. However, after reassigning values for sex and beneficiary type, we no longer have correct representations from our sample for such groups. Consequently, for Quarters 1 and 2 a weight adjustment or poststratification was implemented to reduce bias of survey estimates due to such distortion.

Post-stratification is a common technique for adjusting survey data using external data from a sampling frame, census or larger survey. This technique is widely used to reduce bias due to nonresponse and under- or over-coverage for survey data. The current analysis weight was constructed by incorporating the sampling fraction and nonresponse with classes constructed from sampling variables. We thus need to adjust the weights to correct for gender discrepancy in the 2000 Q1 and Q2 surveys.

So long as geographic group is concerned, the current sample size would not let us consider catchment area level. So we started with regions. In fact, we only report region-level estimates quarterly. However, since subvention areas got special treatment from this survey, we set them aside accordingly. Here is the specification for the construction of the initial poststratification cells:

- ✍ Geographic areas: We started with the 15 TRICARE regions (XREGION=1, 2, 3, 4, 5, 6, 7/8, 9, 10, 11, 12, 13, 14, 15, 16). We also have the six subvention areas (SUBDEMO = 029, 032, 036, 073, 098, 125).
- ✍ Beneficiary group: Other than 65+ in subvention areas, we considered three beneficiary groups: AD, ADFM, and RET&FM (XBNFGRP =1, 2, 3/4) for all regions. For subvention area, only 65+ group was considered. This is consistent with our reporting plan.
- ✍ Enrollment group: All three enrollment groups are considered: Tricare Prime enrollee with MTF; enrollee with CTF; and nonenrollee (PCM= 'MTF', 'CIV', ' ').
- ✍ Gender: Male and Female group (XSEX = 1, 2) are considered for selected beneficiary groups.

Instead of using a simple cross-classification of the above four variables, we initially created the POSTRATA variable by combing the variables as described below. The last digit indicates a combination of beneficiary/enrollment/gender characteristic

IF SUBDEMO = . then do;

```

    If XBNFGRP = 1 and XSEX = 1 then POSTSTRA = XREGION || '1';
    ELSE If XBNFGRP = 1 and XSEX = 2 then POSTSTRA = XREGION || '2';
    ELSE If XBNFGRP = 2 and PCM = 'MTF' and XSEX = 1 then POSTSTRA = XREGION || '3';
    ELSE If XBNFGRP = 2 and PCM = 'MTF' and XSEX = 2 then POSTSTRA = XREGION || '4';
    ELSE If XBNFGRP = 2 and PCM = 'CIV' then POSTSTRA = XREGION || '5';
    ELSE If XBNFGRP = 2 and PCM = ' ' then POSTSTRA = XREGION || '6';
    ELSE If XBNFGRP in (3, 4) and PCM = 'MTF' then POSTSTRA = XREGION || '7';
    ELSE If XBNFGRP in (3, 4) and PCM = 'CIV' then POSTSTRA = XREGION || '8';
    ELSE If XBNFGRP in (3, 4) and PCM = ' ' then POSTSTRA = XREGION || '9';

```

End;

```

    ELSE IF PCM ('MTF','CIV') then POSTRATA = SUBDEMO || '1';
    ELSE POSTRATA = SUBDEMO || '0';

```

Note that all eligible and ineligible respondents (FNSTATUS=11, 30) are included in this weighting process. There are 147 cells from this initial specification. To avoid too much smoothing of the weights we decided that within regions we needed to break out smaller geographic areas.

Based on the distribution of eligible respondents across these cells, we split regions into groups of catchment areas, which we call subregions. Out of catchment areas within a region also constitute a subregion. To create subregions, we looked at the poststratification adjustments for each catchment area in a region for active duty beneficiaries. Based on the adjustment factor, we then grouped homogeneous catchment areas into subregions. These subregions were used for all beneficiary groups. We then divided the subregions into smaller groups of active duty, active duty family members, retired enrolled, and retired not enrolled. Moreover, when the respondent counts in the poststrata are small, collapsing over adjacent poststrata was used to reduce variability in the poststratification weights. We kept the subvention demonstration poststrata as described in the initial specifications.

To illustrate the use of poststratification, let g index poststrata, where $g = 1, 2, \dots, G$. The poststratification adjustment factor for the g -th poststrata was defined as:

$$(6) \quad A_{ps}(g) = \frac{N(g)}{\sum_{h,i \in S(g)} W_{wc2}(h,i)}$$

where:

$N(g)$ is the total number of beneficiaries in the DEERS frame associated with the g -th post-stratum, and $S(g)$ is the set of sample records that are found in the g -th poststratum.

The poststratified adjusted weight for the i -th sample record from the h -th design stratum and the g -th poststratum was then calculated as:

$$(7) \quad W_{ps}(g,h,i) = A_{ps}(g) W_{wc2}(h,i)$$

When summed over members of poststratum g , the poststratified weights now total $N(g)$. This poststratified weight is the final analysis weight used for all reporting and analysis.

5. Calculation of Combined Annual Weights

A dataset combining the four consecutive quarterly data was constructed. However, since there were a number of late respondents who were not included in the Quarter 1-Quarter 3 2000 files, the first three quarters were re-weighted before they were merged into the combined annual dataset. These new Quarter 1-Quarter 3 datasets contain the responses of respondents who “trickled” in past the deadline for the survey. Moreover, a few additional changes were made in re-weighting the data in order to provide consistency among the quarters. First, we uniformly collapsed small cells for all four quarters. Collapsing cells uniformly across all quarters ensures that all quarters, ultimately, contain identical catchment areas and identical final adjusted cells. The quarter3 general collapse rules for small cells were applied to all of the quarters. Any remaining catchment areas or enrollment beneficiary groups with small cell counts for any of the four quarters were then collapsed for all quarters of data. Additionally, in creating the new quarterly data, we did not post-stratify. Since the poststratification for the gender mismatch was only performed in quarters 1 and 2 (see discussion in section 4 above), it was decided that we would not post-stratify the new data. Finally, in the first three quarters, cacsmp1 “9914” and “9915” were collapsed into cacsmp1 “9915” during sampling. In the new datasets, the original values of these catchment areas were restored. After implementing the abovementioned changes to the data and obtaining new weights, the quarter1-quarter3 datasets and the quarter4 dataset were merged to form a combined annual dataset with data for all four quarters.

Because combined sample sizes are sufficiently large to provide statistically reliable estimates with this combined dataset, users will be able to calculate survey estimates for finer domains, such as catchment areas. Construction of an appropriate weight will allow users to consider the combined data as the data from a single survey. Moreover, the method outlined here allows for the continued calculation of quarterly estimates as well as the ability to combine any sequential four quarters into a combined data set.

The method used for combining the four quarters and calculating combined estimates assumes that the variation in estimates from one quarter to the next is due merely to sampling variation. That is, combined estimates can be calculated from the four independent samples by averaging the estimates for the four quarters. These combined estimates will, in fact, be more precise than the quarterly estimates because they average out the variation across the quarters.

We calculated the final survey weight for each quarter within the combined data set. Without the loss of generality, let us denote the current quarter by Q4. Then, the combined dataset would include the four quarterly data sets: Q1, Q2, Q3, and Q4. Let us denote quarterly final quarterly survey weights by WQ1, WQ2, WQ3, and WQ4. To retain the sum of the weights from the combined data as the population count, we will need to rescale each quarterly survey weights to meet the following condition:

$$(8) \quad WCOM = q_1 WQ1 + q_2 WQ2 + q_3 WQ3 + q_4 WQ4$$

where q_i is between 0 and 1 with the constraint $q_1 + q_2 + q_3 + q_4 = 1$. We can make choice of q_i based on various assumptions. We have decided that each quarterly contribution should be equal. If we assume an equal relationship among the quarters, then, each q_i is as follows:

$$q_1 = 0.25, q_2 = 0.25, q_3 = 0.25, q_4 = 0.25.$$

Then, the final weight for the combined data will be WCOM in (8).

The final data file retains the quarterly sampling stratum variables and quarterly weight as well as the combined weight. The file also contains an indicator variable for the quarters. From this combined data set, one can calculate both combined and quarterly estimates.

6. Calculation of Jackknife Replicates

We constructed the 60 jackknife replicates as follows. First, the entire file of sampled beneficiaries was sorted according to stratification variables. Next, 60 mutually exclusive and exhaustive systematic sub-samples of the full sample were identified in the sorted file. A jackknife replicate was then obtained by dropping one subsample from the full sample. By dropping each subsample in turn, the same number of different jackknife replicates as subsamples was defined. The entire weighting process as applied to the full sample was then applied separately to each of the jackknife replicates to produce a set of replicate weights for each record. A series of jackknife replicate weights (WRWT01-WRWT60) was then attached to each beneficiary record in the final database. Given jackknife replicate weights, WesVarPC[®] (Brick et al. 1996) or in-house programs can be used to construct jackknife replication variance estimates.

We also constructed 60 jackknife replicates for the combined estimates by calculating the weights in a manner similar to the one described in section 5 above, with each quarter, once again, contributing an equal 25% towards the total weight.

•
•
•
•
•
•

PAGE IS INTENTIONALLY LEFT BLANK TO ALLOW FOR DOUBLE-SIDED COPYING

Chapter

4

Analysis

This chapter explains how the HCSDB variables were processed during the analysis phase of the project. It covers the procedure for calculating response rates, development of the dependent and independent variables for the analysis and the method for estimating the variance of the statistics. The National Executive Summary Report is described briefly along with an outline of the steps involved to create charts for the reports.

A. RESPONSE RATES

In this section, we present the procedures for response rate calculation along with a brief analysis of response rates for domains of interest. Response rates for the 2000 Adult HCSDB were calculated in the same way as they were calculated in 1999. The procedure is based on the guidelines established by the Council of American Survey Research Organization (CASRO 1982) in defining a response rate.

1. Definition of Response Rates

In calculating response rates and related measures, we considered two different rates: *unweighted* and *weighted*. The unweighted version of the response rate represents the counted proportion of respondents among all sampled units, and the weighted version indicates the estimated proportion of respondents among all population units. When sampling rates across all strata are equal, these two approaches give the same result. However, the 2000 HCSDB used different sampling rates across strata. So, it is useful to show both “unweighted” and “weighted” response rates. We calculated these two response rates in the same way. As presented in Chapter 3, all sampled beneficiaries were completely classified into these four main (six detailed) groups: Group 1 (G1-1 and G1-2), Group 2, Group 3, and Group 4 (G4-1 and G4-2):

- ✍ Group 1 (G1-1): eligible and complete questionnaire returned;
- ✍ Group 1 (G1-2): eligible and incomplete questionnaire returned;
- ✍ Group 2: eligible and questionnaire not returned;
- ✍ Group 3: ineligible
- ✍ Group 4 (G4-1): eligibility unknown and locatable; and
- ✍ Group 4 (G4-2): eligibility unknown and unlocatable.

The unweighted counts reflect the number of sampled cases (n_i for Group i , where $i=1,2,3,4$), and the weighted counts reflect the estimated population size¹ (\hat{N}_i for Group i , where $i=1,2,3,4$) for the four main response categories.

These weighted and unweighted counts were also calculated for the subgroups G1-1, G1-2, G4-1, and G4-2, where we denote the unweighted counts by $n_{1,1}$, $n_{1,2}$, $n_{4,1}$, and $n_{4,2}$, and the weighted counts by $\hat{N}_{1,1}$, $\hat{N}_{1,2}$, $\hat{N}_{4,1}$, and $\hat{N}_{4,2}$. With these values, we calculated response rates as follows.

Response rates can be partitioned into two measures: the location rate and the completion rate. To calculate the location rate, we first estimated the number of Group 4 “located” beneficiaries who were expected to be eligible for the survey:

(1)

$$l = \frac{n_1 + n_2 + n_3}{n_1 + n_2 + n_3 + n_{4,1}} \quad \text{and} \quad l_w = \frac{\hat{N}_1 + \hat{N}_2 + \hat{N}_3}{\hat{N}_1 + \hat{N}_2 + \hat{N}_3 + \hat{N}_{4,1}}$$

where l and l_w are unweighted and weighted estimates of the number of “located” beneficiaries among Group 4. Then, the unweighted and weighted “location rates” are defined by:

(2)

$$LR = \frac{n_1 + n_2 + l}{n_1 + n_2 + n_{4,1} + \frac{n_1 + n_2}{n_1 + n_2 + n_3 + n_{4,1}}} \quad \text{and} \quad LR_w = \frac{\hat{N}_1 + \hat{N}_2 + l}{\hat{N}_1 + \hat{N}_2 + \hat{N}_{4,1} + \frac{\hat{N}_1 + \hat{N}_2}{\hat{N}_1 + \hat{N}_2 + \hat{N}_3 + \hat{N}_{4,1}}}$$

And the corresponding unweighted and weighted “completion rates” are defined by:

(3)

$$CR = \frac{n_{1,1}}{n_1 + n_2 + l} \quad \text{and} \quad CR_w = \frac{\hat{N}_{1,1}}{\hat{N}_1 + \hat{N}_2 + l_w}$$

The final response rates in Equation (5) can be obtained by multiplying the location rate in Equation (2) by the completion rate in Equation (3).

¹The weighted sum of sampled units can be regarded as an estimated population size. The base weight (BWT) was used in calculating weighted counts, where BWT is the inverse of selection probability.

(4) :

$$FRR \neq LR \neq CR \text{ and } FRR_w \neq LR_w \neq CR_w$$

In the definitions in Equations (1) through (4), the subscript “w” indicates that all calculations involve weighted counts. The method that we used to calculate response rates is consistent with the CASRO guidelines.

2. Reporting

We examined response rates to identify patterns across different domains or characteristics. While analysts prefer weighted rates that reflect the estimated proportion of respondents among all population beneficiaries, operational staff are often interested in getting unweighted measures. All tables include unweighted and weighted values under columns headed “Unweighted” and “Weighted”, respectively. In the following, we focus on discussing unweighted response rates for domains of interest.

Table 4.1 includes response rates for the 2000 Adult HCSDB for each quarter and for the combined dataset as a whole, by beneficiary groups, and by enrollment status.

- ✍ Overall: The overall unweighted response rate for the 2000 Adult HCSDB for combined dataset was about 35 percent (which is found in Table 4.1 in the row of “Overall” under the column of “RR” in “COMBINED”). This rate is substantially lower than the 42 percent rate achieved in the 1999 survey, but is equal to the rate achieved in 1998.
- ✍ Beneficiary group and enrollment status: All response rates according to beneficiary groups and enrollment status show similar patterns as the 1999 survey, i.e., active duty beneficiaries had the lowest response rates and beneficiaries 65 years and older with a military PCM had the highest rate.¹
- ✍ The response rates for the first three quarters are relatively stable. However, in quarter four the rates for active duty and active duty family members drop significantly. These drops in response could be due the involvement of beneficiaries in military action in the Fall of 2001. Rates of response for retirees less than 65 years old are also somewhat lower in the fourth quarter. These declines might be attributed the reluctance of beneficiaries to open unsolicited mail in the wake of the Anthrax contamination. Interestingly, the rate of response from retirees 65 and older and enrolled with a civilian PCM is highest in the fourth quarter.

¹ However, response patterns vary considerably across beneficiary and enrollment groups. The relatively low level of response for active duty persons and their family members could be due to frequent relocations and our inability to receive new addresses in a timely manner.

TABLE 4.1

RESPONSE RATES OVERALL, BY ENROLLMENT GROUP, AND BY BENEFICIARY GROUP FOR
QUARTERS I, II, III AND IV COMBINED

	<i>Q1</i>		<i>Q2</i>		<i>Q3</i>		<i>Q4</i>		<i>COMBINED</i>	
	RR ² (%)	RR _w ³ (%)	RR (%)	RR _w (%)	RR (%)	RR _w (%)	RR (%)	RR _w (%)	RR (%)	RR _w (%)
Overall	33.7	45.8	36.1	46.8	34.9	48.1	33.3	45.6	34.5	46.6
Active duty	21.8	20.2	22.0	21.0	22.0	20.9	19.3	18.3	21.4	20.1
Active duty family, Prime, civilian PCM	32.7	33.1	28.8	35.4	33.6	35.3	31.2	30.9	32.1	33.7
Active duty family, Prime, military PCM	31.5	30.9	31.2	30.5	32.7	32.2	27.2	27.2	30.6	30.2
Active duty family, non-enrollee	22.0	22.9	23.0	24.8	22.0	24.7	19.8	21.6	21.5	23.5
Retired, <65,civilian PCM	57.7	58.6	59.5	63.8	60.9	63.1	57.6	57.7	58.9	60.8
Retired, <65,military PCM	58.0	58.0	56.5	57.0	57.3	56.6	53.5	54.6	56.3	56.5
Retired, <65,non-enrollee	47.0	51.0	50.0	51.8	49.3	52.8	45.5	50.8	48.1	51.6
Retired, 65+, civilian PCM	66.1	63.5	82.6	80.8	78.9	77.9	85.3	84.3	78.3	77.0
Retired, 65+, military PCM	84.4	86.8	84.1	85.4	83.7	85.7	83.5	83.3	83.9	85.3
Retired, 65+, non-enrollee	70.0	70.7	70.1	71.8	71.5	75.0	70.6	73.5	70.5	72.8

For domains of special interest, Appendix D contains tables showing response rates and weighted response rates for each quarter and for the combined dataset. We summarize results about response rates for selected domains as follows:

- ✍ Regions: Combined response rates across regions range from 18 percent for Western Pacific Command to 42 percent for the Gulf South (Table D.1).
- ✍ Sex: Combined response rate for men is 32 percent as compared to 38 percent for women. (Table D.2).
- ✍ Conus: Combined response rate for CONUS is 37 percent as compared to 19 percent for OCONUS. (Table D.3).
- ✍ Catchment areas: Combined response rates across catchment areas range from 14.3 percent for Naples to 51 percent for Keesler AFB. (Table D.4).
- ✍ Beneficiary groups by sex: Women respond at a higher rate than do men for both active duty and active duty family members, 24 percent versus 21 percent and 30 percent versus 17 percent, respectively. The opposite pattern emerges for retirees, survivors and family members 65 and older. The response rates for retirees less than 65 are the virtually the same for men and women. (Table D.5).
- ✍ Beneficiary group by service affiliation (Army, Navy, Air Force, Marine Corps, Coast Guard): Among service affiliations, the smallest combined response rate comes from active duty from the Marine Corps with 14 percent and the largest from beneficiaries over 65 from the Air Force with 75 percent (Table D.6).

B. VARIANCE ESTIMATION

To calculate the standard errors (the squared roots of variances) of estimates for the 2000 HCSDB analyses, we used the Taylor series linearization method via SUDAANTM (Shah et al. 1996). For analysts who prefer a replication method, 60 replicate weights for jackknife replication are provided in the public use file. Here we describe variance estimation methods for the Taylor series linearization method and the jackknife replication method.

² Final Response Rate

³ Final Weighted Response Rate

1. Taylor Series Linearization

MPR uses Taylor series linearization to produce standard errors for the estimates from the 2000 HCSDDB. For most sample designs, including the 2000 HCSDDB, design-based variance estimates for linear estimators of totals and means can be obtained with explicit formulas. Estimators for nonlinear parameters such as ratios do not have exact expressions for the variance. The Taylor series linearization method approximates the variance of a nonlinear estimator with the variances of the linear terms from the Taylor series expansion for the estimator (Woodruff 1971). To calculate variance estimates based on the Taylor series linearization method, given HCSDDB's stratified sampling design, we need to identify stratum as well as the final analysis weight for each data record. We included these variables on the final database. For variance estimation, we use the general purpose statistical software package SUDAAN to produce Taylor series variance estimates. SUDAAN is the most widely used of the publicly available software packages based on the Taylor series linearization method. In SUDAAN, the user specifies the sampling design and includes variables recording stratum and the analysis weight for each record. Unlike WesVarPC, there is no restriction to the number of strata in SUDAAN, so stratification effects can be incorporated in calculating standard errors.

Some of the reported estimates are composite scale scores that are linear functions of individual estimates. The sampling variance for these scale estimates can be directly obtained from the usual design-based variance estimation formula by incorporating the covariance terms among individual items within the scale.

$$\text{Let } \bar{y} = \frac{\sum_{h=1}^L \sum_{i=1}^{n_h} W_{hi} Y_{hi}}{\sum_{h=1}^L \sum_{i=1}^{n_h} W_{hi}}$$

denote an estimator of a composite scale where individual composite measure for beneficiary (h, i) consists of r items is thus denoted as:

$$Y_{hi} = \sum_{j=1}^r X_{hi,j} / r$$

Then, a customary variance estimator of \bar{y} is the sum of the item variances and covariances among item estimates:

$$v(\bar{y}) = \frac{1}{r^2} \sum_{j=1}^r \text{var}(\bar{x}_j) + \sum_{j \neq j'} \text{cov}(\bar{x}_j, \bar{x}_{j'})$$

All of the variance components can be obtained from the usual survey specific software such as SUDAAN and WesVarPC, which are described above.

2. Jackknife Replication

Jackknife replicate weights can be used to calculate the standard errors of estimates. An estimate of a characteristic of interest is calculated (with the same formula as the full sample estimate) using each set of replicate weights; these replicate estimates are used to derive the variance of the full sample statistic.

a. Calculation of Jackknife Replicates

A series of jackknife replicate weights are calculated and attached to each beneficiary record in the database. In jackknife replication, a prescribed number of replicates are generated by deleting selected cases from the full sample. Given jackknife replicate weights, WesVarPC® (Brick et al. 1996) can be used to produce variance estimates. WesVarPC allows jackknife variance estimation for two primary sampling units per stratum up to 100 strata, or up to 256 replicates without stratification. However, the 2000 HCSDb for adults involves 258 post-strata for analysis. To use WesVarPC, we must modify the actual design to create fewer strata. The two options for doing this are to (1) form fewer than 256 replicates by ignoring stratification or (2) form replicates by collapsing strata to fewer than 100 and by assigning each unit to one of two pseudo primary sampling units (PSUs). For either option, the entire weighting process as described in the previous sections must be applied for each jackknife replicate.

We use option 1 to construct the jackknife replicates as follows. First, the entire file of sampled beneficiaries is sorted in sample selection order in which stratification variables are only used in the sorting process. Next, 60 mutually exclusive and exhaustive systematic subsamples of the full sample are identified in the sorted file. A jackknife replicate is then obtained by dropping one subsample from the full sample. As each subsample is dropped in turn, the same number of different jackknife replicates as subsamples is defined. The entire weighting process as applied to the full sample is then applied separately to each of the jackknife replicates to produce a set of replicate weights for each record. Then, the series of jackknife replicate weights (WRWT01 – WRWT60) is attached to the final data in order to construct jackknife replication variance estimates.

b. Software for Jackknife Replication

The jackknife variance of the full sample statistic of interest is estimated from the variability among the replicated estimates. When the replicate weights are produced according to the above procedure, jackknife replicate standard errors can be produced using custom written software or publicly available statistical software. For instance, WesVarPC is a popular software package that calculates standard errors based on replication methods. It produces standard errors for functions of survey estimates such as differences and ratios as well as simple estimates such as mean, proportion, and totals. Additional details about the jackknife replication approach are given in Wolter (1985). Like other replication methods, the jackknife variance estimation can be easily implemented for any form of estimate without further algebraic work.

C. SIGNIFICANCE TESTS

In certain charts in the adult report cards and the National Executive Summary Report (NESR) statistical testing is done to show which columns of the chart (values of the independent variable) are statistically different from all CONUS regions as a whole. Positional arrows show if a region is statistically better than the CONUS regions (an arrow pointing up) or statistically worse than the CONUS regions (an arrow pointing down); if there is no arrow, there is no statistical difference.

The null hypothesis for this significance test is that the mean for the column is essentially equal with the CONUS mean, and the alternative is that the mean for the column is different from the CONUS mean. That is, we are testing:

$$H_0: \mu_1 = \mu_2 \quad \text{vs.} \quad H_a: \mu_1 \neq \mu_2$$

For instance, μ_1 might represent the characteristic of interest for the active duty group while μ_2 might represent the same characteristic for all CONUS regions.

With large sample sizes, the estimator $\bar{y}_1 - \bar{y}_2$ is approximately distributed as a normal distribution with mean zero and variance $\sigma_{y_1 - y_2}^2$ under the null hypothesis. In testing the hypothesis, a test Statistic T is thus calculated as:

$$T = \frac{\bar{y}_1 - \bar{y}_2}{\sigma_{y_1 - y_2}}.$$

With $\alpha = 0.05$, the null hypothesis should be rejected if $|T| > 1.96$. The denominator of T, the standard error of $\bar{y}_1 - \bar{y}_2$, can be calculated as the square root of the variance estimator $\sigma_{y_1 - y_2}^2$:

$$\sigma_{y_1 - y_2}^2 = \text{var}(\bar{y}_1) + \text{var}(\bar{y}_2) - 2\text{cov}(\bar{y}_1, \bar{y}_2).$$

If \bar{y}_1 and \bar{y}_2 are independent, then the covariance term equals zero and thus the variance estimator can be easily obtained as the sum of two individual variance estimators. However, there are some cases in which the condition of independence does not hold. For example, Active Duty MTF group is not independent with the CONUS regions because these two domains share Active duty group within the CONUS regions. So the covariance term should be incorporated in calculating the variance estimator of the estimator of the difference. With suitable algebra and program modification, these covariance terms were calculated for all such cases. All detailed programs are included in Appendix J-12.

D. DEMOGRAPHIC ADJUSTMENTS

All scores in the TRICARE Consumer Reports are adjusted for patient characteristics affecting their scores. Scores can be adjusted for a wide range of socioeconomic and demographic variables.

The purpose of risk-adjustment is to make comparisons of outcomes, either internally or to external benchmarks, that control for characteristics beyond the health care provider's control. Based on previous work with satisfaction scales derived from CAHPS, it appears that satisfaction increases with age and decreases with poor health across social classes and insurance types. Besides controlling for these factors, the methodology used:

- ✍ Permits risk adjusted comparisons among regions and catchment areas within and across beneficiary and enrollment groups
- ✍ Permits testing the hypothesis that the difference in risk-adjusted scores between a region or catchment area and a benchmark is due to chance
- ✍ Is appropriate for CAHPS composites and global satisfaction ratings.

The methodology used is an adaptation of that found in CAHPS 2.0 Survey and Reporting Kit (DHHS, 1999)

The model used for this adjustment is:

⋮
⋮
⋮
⋮
⋮

$$Y_{ijkl} = \beta_{0l} + \beta_{1l}A_{1l} + \beta_{2l}A_{2l} + \dots + \beta_{7l}A_{7l} + \beta_{8l}P_l + \epsilon_{ijkl},$$

where the subscript l refers to a beneficiary group, Y_{ijkl} is a dependent variable, β_{ql} 's are parameters to be estimated, A_{ql} 's are age dummy variables ($A_{ql} = 1$ if the beneficiary is in age group q , and 0 otherwise; A_1 = age 18-24, A_2 = age 24-34, A_3 = age 35-44, A_4 = age 45-54, A_5 = age 55-64, A_6 = age 65-74, and A_7 = age 75 and older), P_l is health status. The subscripts i , j , and k refer to the region, MTF, and beneficiary, respectively.

Given 15 regions and $J+1$ catchment areas, the specifications that we use are:

$$Y_{ijkl} = \beta_{0l} + \beta_{1l}R_{1l} + \beta_{2l}R_{2l} + \dots + \beta_{15l}R_{15l} + w_{ijk},$$

where R_i 's are regional dummy variables ($R_{il} = 1$ if the beneficiary is in region i and beneficiary group l , and 0 otherwise), and

$$Y_{ijkl} = \beta_{0l} + \beta_{1l}H_{1l} + \beta_{2l}H_{2l} + \dots + \beta_{Jl}H_{Jl} + w_{ijk},$$

where H_{ij} 's are catchment area dummy variables ($H_{ij} = 1$ if the beneficiary is in catchment area j and beneficiary group l , and 0 otherwise). The first specification is used when catchment area values are not reported, and the second when catchment areas are reported.

The methods for calculating demographically adjusted values and testing hypotheses of differences in demographically adjusted scores among providers vary with the way Y_{ijkl} is defined. For specification 1, the adjusted mean of the dependent variable Y for region i can be obtained as:

$$\bar{y}_i = \beta_0 + \beta_1\hat{A}_1 + \beta_2\hat{A}_2 + \dots + \beta_7\hat{A}_7 + \beta_8\hat{P},$$

where $\hat{\beta}_i$'s are estimated model parameters, \hat{A}_i 's are weighted proportions of age group i among

the total U.S. population, and \hat{P} is the weighted MHS means of the variable P . For beneficiary group l , the adjusted regional value is:

$$\bar{y}_{il} = \beta_{0l} + \beta_{1l}\hat{A}_1 + \beta_{2l}\hat{A}_2 + \dots + \beta_{7l}\hat{A}_7 + \beta_{8l}\hat{P},$$

where \hat{A}_{ql} 's are weighted proportions of age group q in the MHS. The value for catchment area J can be calculated as $\bar{y}_{il} - \bar{w}_{ijkl}$, where \bar{w}_{ijkl} is the mean residual for catchment area J and beneficiary group(s) l .

For specification 2, an adjusted catchment area value can be calculated as:

$$\bar{y}_{ij} = \beta_0 + \beta_1\hat{A}_1 + \beta_2\hat{A}_2 + \dots + \beta_7\hat{A}_7 + \beta_8\hat{P},$$

while the regional value can be calculated as:

$$\bar{y}_i = \beta_0 + \beta_1\hat{A}_1 + \beta_2\hat{A}_2 + \dots + \beta_7\hat{A}_7 + \beta_8\hat{P},$$

where $\bar{\beta}_i$ is the weighted mean for all catchment areas in Region i .

Standard errors then can be estimated as the standard error of residuals for catchment areas or regions using SUDAAN. These standard errors can be used in hypothesis tests comparing adjusted values to other adjusted values or to external benchmarks. Composite values are calculated as averages of regional or catchment area adjusted values for questions making up the composites, in which each question is equally weighted.

E. DEPENDENT AND INDEPENDENT VARIABLES

Dependent, or outcome, variables represent the research questions the survey is designed to answer. For example, beneficiary satisfaction and access are dependent variables in this analysis. The research questions are listed in Chapter I. Generally, dependent variables form the rows of the tables and the vertical axis of the charts.

Independent, or explanatory, variables do not directly represent research questions, but they may help to explain the differences in one or more of the outcome variables. They may also be correlated with one or more dependent variables. For example, a beneficiary's satisfaction with health care may be correlated with their age and/or TRICARE Prime enrollment status. Each table is designed to help determine whether a particular dependent variable is correlated with a particular independent variable. Independent variables form the columns of the tables and the horizontal axis of the charts.

In analyzing the relationship between dependent and independent variables, MPR produced charts and tables that are found in the reports described below. Beginning with the HCSDB in a SAS format, MPR programmers developed SAS procedures such as PROC FREQ and PROC MEANS and SAS-callable SUDAAN procedures such as PROC DESCRIPT and PROC CROSSTAB to generate the relevant statistics (e.g., per cents, means, and standard errors). These statistical values were moved directly from SAS programs to Excel tables using a dynamic data exchange to populate the cells of the tables. Graphical displays were generated from table values wherever feasible.

F. REPORTS

This section lists the three types of reports produced and states the main purpose of each report: 2000 TRICARE Consumer Reports, the TRICARE Consumer Watch, and the National Executive Summary Report (NESR). The 2000 TRICARE Consumer Reports and the TRICARE Consumer Watch are presented on a quarterly basis and display results from the most recent quarter. The NESR is produced annually and describes findings from all four quarters of survey data.

1. 2000 TRICARE Consumer Reports

a. Purpose

The purpose of the Consumer Reports is to provide Lead Agents and MTF commanders with a comprehensive description of TRICARE beneficiaries' satisfaction with care, access to care, and use of preventive care, in comparison with other regions and catchment areas, and with relevant national benchmarks. MHS scores are adjusted using demographic characteristics. Both quarterly and annual Consumer Reports are produced. The quarterly reports present results from the most recent quarter for each region and for CONUS MHS by beneficiary status and enrollment group, making it easy for the reader to compare findings across groups and quarters. The annual report is a cumulative report that combines results from four quarters and previous years and presents results by catchment area and region.

b. Consumer Report Production**1. Content**

The quarterly Consumer Reports presents 12 scores for all beneficiary groups and all enrollment by region and CONUS MHS overall. Scores are presented in the following areas: getting needed care, getting care quickly, courteous and helpful office staff, how well doctors communicate, customer service, claims processing, rating of the health plan, health care, personal doctor, and specialist, and preventive care standards. The first 6 scores are CAHPS composites, which group together responses to several related survey questions. The CAHPS composite questions are shown in Appendix H. The scores are presented in relation to national benchmarks.

The four ratings of health care and health care providers are: health plan, health care, PCM, and specialist. Rating is based on a scale of 0 to 10, where 0 is the worst and 10 is the best. The scores are adjusted for patient age and health status and are presented relative to national benchmarks.

The TMA Standard Composite is based on how beneficiaries compare preventive care services offered through the MHS with the Healthy People 2010 goals. Preventive care indicators include prenatal care, hypertension and cholesterol screenings, flu immunization, mammography, Pap smears, and other preventive cancer screenings.

A total score combines the other 11 scales into a global performance rating.

2. Format**a. Programming Specifications**

Data for the Consumer Reports is arranged in a SAS data set, consists of records indexed by region, catchment area, enrollment group, beneficiary category, and table column. A benchmark corresponding to the MHS population is also included in the SAS data set. Records contain scores and categorical variables showing their existence and directions of significant differences. The benchmark record contains national mean values, where available, for a comparable non-MHS population.

The data file serves as the basis for the electronic reports and quality assurance. The file for the 2000 HCSDB is updated each quarter and referenced by the report card application. In each quarter, a separate annual and quarterly file is created. The quarterly and annual reports are coded with HTML and a program generates the information in the form of a data set corresponding to the cells in the tables of the reports described below. Appendix G contains the programs to generate the Consumer Reports.

b. Web Specifications

Quarterly Consumer Reports are published in a tabular, interactive, HTML format on TRICARE's website, allowing users to "drill down" in the reports to follow the performance of the MHS over time by enrollment status and beneficiary group. Each report consists of several pages of tables. The first set of tables presents the findings for a single quarter for all enrollment and beneficiary groups by region and CONUS MHS. A second set of tables will present the findings for the current quarter and for the past quarters for each enrollment and beneficiary group, by regions and CONUS MHS. Significant differences between the scores and the benchmark are indicated by color, bolding and italics. Scores significantly above the benchmark are green and bold. Scores significantly below the benchmark are red and italicized.

Like the quarterly report, the annual report is presented in HTML tabular format. One set of tables show cumulative scores for the 2000 HCSDb by region for all beneficiary groups and enrollment groups. Another set shows scores for the questions that make up the composite, along with composites or ratings from the 1999 HCSDb. The third set of tables show scores for the catchment areas that make up the MHS regions.

2. TRICARE Consumer Watch

a. Purpose

Like the TRICARE Consumer Reports, the TRICARE Consumer Watch is targeted to Lead Agents and MTF commanders. TRICARE Consumer Watch presents key results from the quarterly HCSDb in a graphical format. The exhibits present TRICARE beneficiaries' experiences with their health care and health plan and utilization rates for preventive services. Each quarter, the Consumer Watch will contain a special report on a specific aspect of health care affecting TRICARE beneficiaries. The TRICARE Consumer Watch is produced on a quarterly basis for all regions and three service affiliations. In the fourth quarter, the TRICARE Consumer Watch is produced for all catchment areas.

b. 2000 TRICARE Consumer Watch Production

1. Content

The Consumer Watch contains graphs presenting 3 ratings and 6 composite scores. These graphs are based on data from the Consumer Reports. Beneficiaries are asked to rate their experiences with their health care and health plan, and their personal provider on a scale of 0 to 10 where 0 is the worst and 10 is the best. Composite scores evaluate beneficiaries' experiences with: getting needed care, getting care quickly, courteous and helpful office staff, how well doctors communicate, customer service, and claims processing. Using data from the National CAHPS Benchmarking Database, ratings and composites are compared to experiences of individuals in civilian health plans. Ratings and composites are also compared to results from the 1999 HCSDb.

Utilization of preventive care services are measured against the goals established by Healthy People 2010 as well as results from the 1999 HCSDb. Preventive care indicators include preventive cancer screenings, such as mammography and Pap smears, flu immunizations, hypertension screening, and prenatal care.

Another graph depicts current Prime enrollees' intent to disenroll from TRICARE Prime. This graph compares the percentage of retirees or family members of active duty or retirees who plan to disenroll for each region and CONUS. Each quarter, the special report section highlights a certain health care topic. The first quarter featured beneficiaries' experiences with the care of chronic conditions. Beneficiaries rated their health plan's chronic care and how many TRICARE users report no problems in getting necessary equipment, therapy, and home health assistance. The special topics section for the second quarter examines the current MTF use by non-enrolled retirees, age 65 and older and their planned response to new benefits offense through TRICARE for Life. The third quarter focuses on problems TRICARE users are having with their Prime or standard/extra claims. This special topics section presents the proportion of users who have had claims problems and the proportion who tried to get help from a Beneficiary Counseling and Assistance Coordinator (BCAC), a Debt Collection Assistance Officer (DCAO) or other contact. In the fourth quarter, the special topics section focused on the physical and mental health status of beneficiaries. Scores are based on the SF-8 scale, which was developed by Medical Outcomes Trust.

2. **Format**

a. **Programming Specifications**

Data for the Consumer Watch is arranged in a SAS data set, and consists of records indexed by region, catchment area, enrollment group, and beneficiary category. Scores for the rating and composite graphs utilize the same programs as the TRICARE Consumer Reports. The data file for the Consumer Watch is updated each quarter. The programs to generate the Consumer Watch are in Appendix H.

b. **Report Production Specifications**

Though the Consumer Watch reside on TRICARE's website, it is designed to be used primarily in print form. The reports are created in portable document format (PDF). The Consumer Watch is arranged on 2-pages; the key findings are presented as bar graphs. Preventive care scores are presented in table format.

3. **National Executive Summary Report**

a. **Purpose**

The purpose of the National Executive Summary Report is to provide OASD(HA), in general, and TMA, in particular, with a comprehensive national summary of the HCSDB findings. The National Executive Summary Report bar charts reflect survey data from all respondents in the domestic MHS.

b. **Procedures for Report Production**

1. **Content**

There are multiple steps required to design tables and charts and then to populate them with data from the HCSDB. These steps are described below.

2. **Format**

a. **Programming Specifications**

MPR wrote the programs to populate the charts in SAS, using SAS-callable SUDAAN. There are two different types of programs used to create the charts. One type of program creates the charts that show the average ratings of a variable, and the second type of program is used to create the charts that show percentages. The programs for average ratings use the SAS procedure PROC DESCRIPT, and the VAR, TABLES, SUBGROUP, SUBPOPN, and OUTPUT statements are changed for each chart. The programs that calculate percentages use the PROC CROSSTAB procedure, and the TABLES, SUBGROUP, SUBPOPN, and OUTPUT statements in that procedure are changed for each chart. There is a separate program for each chart, and for each chapter of the report there is an overall program that runs all of the individual chart programs in that chapter. The chapter program contains macro variables for region, name of the data file, location of program files, and name of the Excel file containing the charts. This facilitates making changes when the programs are run for each region, as all changes are made just once in the overall chapter program.

Each chart program also contains a DDE link to run the SAS output for each chart into the Excel file, onto the worksheet that contains the standard error table associated with the chart. The data is set up to run into cells on the worksheet that are below the table that is already there. The DDE link

contains row and column references for where to start running the data into Excel and where to end. The data series for each chart and the standard error tables then reference these cells. A sample cell reference looks like:

=Table1!\$A\$1

This example takes the value from the first column (A) and first row (1) of the worksheet labeled Table1.

There are separate programs that calculate significance so that arrows can be added to the charts to indicate whether a finding is significantly higher or lower than the CONUS MHS average or to an external benchmark. Output of these programs is a value of 0, 1, or 2 for each bar in the chart;

0 denotes no significant difference

1 denotes a value significantly higher than CONUS MHS

2 denotes a value significantly lower than CONUS MHS

These values are moved into the appropriate Excel worksheet using a DDE link within the significance test program. A macro written in VBA adds the appropriate arrows to the charts by identifying the value for each bar in the chart and drawing the appropriate arrow to the left of the data label above the bar.

Finally, each completed chart is moved from Excel into its corresponding Word template. To ensure uniformity of the size of each chart within the Word template, all charts are formatted in Excel to be the same size when printed. This is done manually, and each step listed below must be done for each chart:

The first step in moving the charts from Excel to Word is to hold down the Shift key while selecting the Edit menu on the Excel toolbar and then selecting the option to Copy Picture. This brings up a menu with options for copying both the size and appearance of the picture as it is shown on the screen or when printed. For both options, the charts are copied with the option of "as shown when printed".

The Word template is then brought up on the screen, and the chart is pasted into the Word document by selecting either Ctrl-V or Paste on the Edit menu.

The chart can then be moved to the correct place in the template, and a border is placed around the chart by selecting the Format menu on the Word tool bar and clicking on Picture. When this brings up another menu, select the Colors and Lines tab, change the line color to black, and then click the OK button on the menu to draw a solid border

b. Report Production Specifications

The first step in creating the charts/tables for the reports is creating a chart/table shell in Excel. Charts in Excel are created using the Chart Wizard:

First select the type of chart to show. For most charts in the reports, these are clustered column charts.

Next select the data range, which is the group of cells that contain the data to go into the charts. These data are grouped into series, and the series labels are used in the legend, while group labels are used as x-axis labels.

Select Chart Options. This is where the axis titles are entered and where formatting of the axes, gridlines, legend, and data labels occur.

Finally, place the chart on the correct worksheet.

Once all of the charts for the reports are created, they should be formatted with the same fonts and colors and set up to be the same size when printed. The size of the charts is established by using Page Setup from the File menu and changing the margins as follows:

✍ Top margin is 0.975

✍ Right margin is 1.0

✍ Bottom margin is 4.8

✍ Left margin is 0.9.

In addition, each chart is set to print landscape.

To create tables in Excel, start with a blank worksheet and type the title across the top row. The headings for each column in the table go into the second row, and row labels go into the first column of the worksheet. Once all of the labels are in place, format the table in this manner:

✍ Align the labels

✍ Add borders and shading

✍ Cells that contain the data should be centered and formatted to show one decimal place

✍ Cells that contain the standard errors should be formatted to appear in parentheses

Once all of the charts and tables are created in Excel, three macros written in Visual Basic for Applications (VBA) within Excel will automate tasks required for each region. One macro requires the user to input the region number or name, then changes all region references in chart labels, table titles, table labels, and any other references within the spreadsheet to the new region number or name. Two other macros copy the worksheets containing tables to new worksheets, in order to make printing of the tables easier and quicker.

The next step in producing the report is to develop a template page in Word for each chart. In 1999 these Word templates were created using the same format as the 1998 report. The top of the page of each template shows the chart title and associated questions. In the middle of each page is a space for the chart. The bottom left side of the page shows the population, sample size, and descriptions of the chart axes, and the bottom right side of the page includes the description of what the chart shows and the findings section.

Finally, each completed chart is moved from Excel into its corresponding Word template. To ensure uniformity of the size of each chart within the Word template, all charts are formatted in Excel to be the same size when printed. This is done manually, and each step listed below must be done for each chart:

✍ The first step in moving the charts from Excel to Word is to hold down the Shift key while selecting the Edit menu on the Excel toolbar and then selecting the option to Copy Picture. This brings up a menu with options for copying both the size and appearance of the picture as it is shown on the screen or when printed. For both options, the charts are copied with the option of "as shown when printed".

✍ The Word template is then brought up on the screen, and the chart is pasted into the Word document by selecting either Ctrl-V or Paste on the Edit menu.

The chart can then be moved to the correct place in the template, and a border is placed around the chart by selecting the Format menu on the Word tool bar and clicking on Picture. When this brings up another menu, select the Colors and Lines tab, change the line color to black, and then click the OK button on the menu to draw a solid border

REFERENCES

- Brick, J.M., P. Broene, P. James, and J. Severynse. *A User's Guide to WesVarPC. Version 2.0*. Rockville, MD: Westat, Inc., 1996.
- Brick, J.M. and G. Kalton. "Handling Missing Data in Survey Research." *Statistical Methods in Medical Research* 1996; 5: 215-238.
- CASRO. "On the Definition of Response Rates." A Special Report of the CASRO Task Force on Completion Rates, Lester R. Frankel, Chairman, and published by the Council of American Survey Research Organizations, June, 1982.
- Clusen, N.A., D.S. Jang. "The 2000 Health Care Survey of DoD Beneficiaries: Quarter I Adult Sample Design." Mathematica Policy Research, Inc.: Washington, DC: 2000.
- Cochran, W.G. *Sampling Techniques*. Third Edition. New York: John Wiley & Sons, 1977.
- Lessler, J.T., and W.D. Kalsbeek. *Nonsampling Errors in Surveys*. New York: John Wiley & Sons, 1992.
- Shah, B.V., B.G. Barnwell, and G.S. Bieler. *SUDAAN User's Manual*. Release 7.0. Research Triangle Park, NC: Research Triangle Institute, 1996.
- U.S. Department of Health and Human Services. *CAHPS 2.0 Survey and Reporting Kit*. Rockville, MD 1999.
- Wolter, Kirk M. *Introduction to Variance Estimation*. New York: Springer-Verlag. 1985.
- Woodruff, R.S. "A Simple Method for Approximating the Variance of a Complicated Estimate." *Journal of the American Statistical Association*, 66, 1971, pp. 414-414.